



## **MONITORING REPORT**

### **COMPOST STORMWATER FILTER SYSTEM MONITORING – STATE ROUTE 73**

**CTSW-RT-03-036**

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***CALIFORNIA DEPARTMENT OF TRANSPORTATION  
SACRAMENTO, CALIFORNIA***

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***JUNE 2003***



## ACRONYMS AND ABBREVIATIONS

ADV	Automated Data Validation
COC	Chain-of-Custody
CDO	Cease and Desist Order
CSF	Compost Storm Water Filter
DOC	Dissolved Organic Carbon
DQO	Data Quality Objective
EDD	Electronic Data Deliverable
EIS	Environmental Impact Statement
EMC	Event Mean Concentration
OCPFRD	Orange County Public Facilities and Resources Division
OCVCD	Orange County Vector Control District
PAH	Polycyclic Aromatic Hydrocarbons
QA	Quality Assurance
QC	Quality Control
RL	Reporting Limit
RMP	Runoff Management Plan
SDRWQCB	California Regional Water Quality Control Board, San Diego Region
TCA	Transportation Corridor Agencies
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TSS	Total Suspended Solids
WQMP	Water Quality Monitoring Plan



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## EXECUTIVE SUMMARY

In accordance with Cease and Desist Order (CDO) No. 2001-198, this Monitoring Report presents storm water analytical data collected during the 2001/2002 and 2002/2003 wet seasons from three Compost Storm Water Filter (CSF) systems along the San Joaquin Hills Transportation Corridor (SR-73). Each CSF system is composed of a flow equalization basin and a horizontal bed compost storm water filter unit. The flow equalization basin is upstream and in-line with the CSF unit. Consistent with directive number four in the CDO, storm water monitoring was conducted to: (1) determine the quality of runoff from SR-73; (2) determine the effectiveness of the CSF units and flow equalization basins in removing pollutants of concern from runoff from SR-73; (3) determine if the CSF units are contributing nutrients, and (4) if the CSF units are contributing nutrients, is it resulting in the impairment of water quality and beneficial uses of receiving waters associated with SR-73

To assess the quality of runoff from SR-73, eighty-one samples were collected from six monitoring stations during the two-year monitoring period. Samples were analyzed for the Caltrans standard suite of constituents in addition to those outlined in the CDO. Analytes included conventional analytes (TSS, TDS, TOC, DOC, Hardness, pH, Conductance), nutrients (nitrate, nitrite, ammonia, TKN, total and dissolved phosphorous, dissolved ortho-phosphate), total and dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn), oil and grease, PAHs, and total and fecal coliform. These highway runoff concentrations were used as a baseline to assess the pollutant removal capabilities of the flow equalization basins and CSF units at the three sites.

To determine the ability of the CSF units and detention basins to remove pollutants of concern, several parameters (nitrate, ortho-phosphate, total phosphorous, TSS, and total and dissolved copper, lead, and zinc) were selected for statistical and non-statistical analysis. For the statistical analysis, a pair-wise t-test was used to assess the null hypothesis that there is no difference in concentration between the influent and effluent



of the system component (the flow-equalization basin or the filter). Non-statistical analysis consisted of plotting the concentration of each monitoring point (highway runoff, basin effluent, and filter effluent) versus the initial (highway runoff) concentration for each sample collected during the two-year monitoring period.

For selected parameters of concern, t-test results indicate that nitrate concentrations increase through the CSF unit at each of the three monitoring sites. T-test results for other parameters of concern did not show consistent increase or decrease through the CSF components. The non-statistical analysis suggests that for most storms the concentration of copper (total and dissolved) and zinc (total and dissolved) decreased through CSF systems 604R and 785L. For each constituent, the reduction in concentration in the flow-equalization basin appears to be greater than the reduction in concentration in the CSF unit.

Visual inspection of the receiving waters of the CSF systems for periphyton growth, color, turbidity, odor and changes in physiography, in addition to quantitative nutrient analyses, were included in the study of the CSF systems to evaluate if eutrophication was occurring. The semi-quantitative observations of the receiving waters downstream indicate the discharges from the CSF systems did not induce classical signs of eutrophication. While the quantitative analytical results indicate export of some nutrients, there were no visual indications that the nutrients discharged from the CSF systems resulted in eutrophication. Therefore, there were no indications that the discharge impaired the water quality and beneficial uses of the receiving waters associated with SR-73.



## 1.0 INTRODUCTION

### 1.1 PURPOSE

Caltrans has prepared and submitted this Monitoring Report to the California Regional Water Quality Control Board, San Diego Region (SDRWQCB) in accordance with Cease and Desist Order (CDO) No. 2001-198 (Appendix A, Reference 7.1), issued July 20, 2001. This Monitoring Report presents storm water analytical data collected over the past two wet seasons (2001/2002 and 2002/2003) from three Compost Storm Water Filter (CSF) systems<sup>(1)</sup> along the San Joaquin Hills Transportation Corridor (SR-73). Consistent with directive number four in the CDO, monitoring was to: (1) determine the quality of runoff from SR-73; (2) determine the effectiveness of the CSF units and flow equalization basins in removing pollutants of concern from runoff from SR-73; and (3) determine if the CSF units are contributing excess nutrients, and (4) if the CSF units are contributing excess nutrients, is it resulting in the impairment of water quality and beneficial uses of receiving waters associated with SR-73.

Monitoring was conducted in accordance with the *Water Quality Monitoring Plan* (WQMP) (Reference 7.2) previously submitted to the SDRWQCB, and the *Caltrans Guidance Manual: Stormwater Monitoring Protocol, Second Edition, May 2001* (Reference 7.3) except when superseded by the requirements of the CDO.

### 1.2 SCOPE OF WORK

The scope of work included installing storm water monitoring stations at the three CSF system locations, monitoring storm water quality during the 2001/2002 and 2002/2003 wet seasons, and visually assessing the location where CSF system effluent discharges to receiving waters along with the upstream and downstream sections. The scopes of these activities are discussed below.

#### Installation of Monitoring Stations

Monitoring stations were installed at each location where storm water samples were collected. Four to six monitoring stations were installed at each CSF system depending on the number of

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<sup>(1)</sup> The CSF system is composed of a flow equalization basin and a horizontal bed compost storm water filter unit. The flow equalization basin is upstream and in-line with the CSF unit.



flow equalization basin inlets. The monitoring stations included concrete or wooden platforms and fiberglass enclosures to protect the monitoring equipment. The monitoring equipment consisted of rain gauges, flow meters, and automated samplers. Flow measurement probes and sample intake strainers were installed at each sample point to measure flows and collect representative samples.

### Storm Water Monitoring

Storm water monitoring was performed throughout the 2001/2002 and 2002/2003 wet seasons using the automated samplers and flow meters. Flow-weighted composite samples were collected at the selected monitoring sites. Grab samples were collected for oil and grease, and total and fecal coliform. Samples were analyzed by a state-certified laboratory for the constituents outlined in the WQMP.

### Monitoring of Receiving Waters

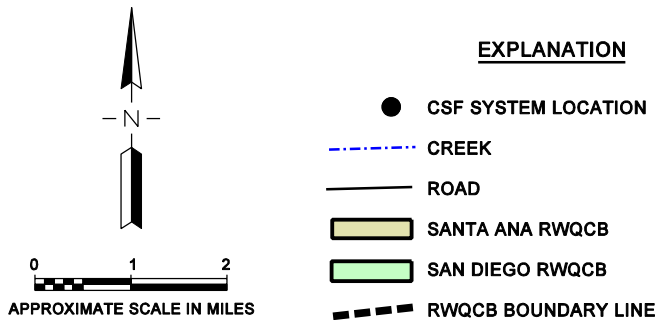
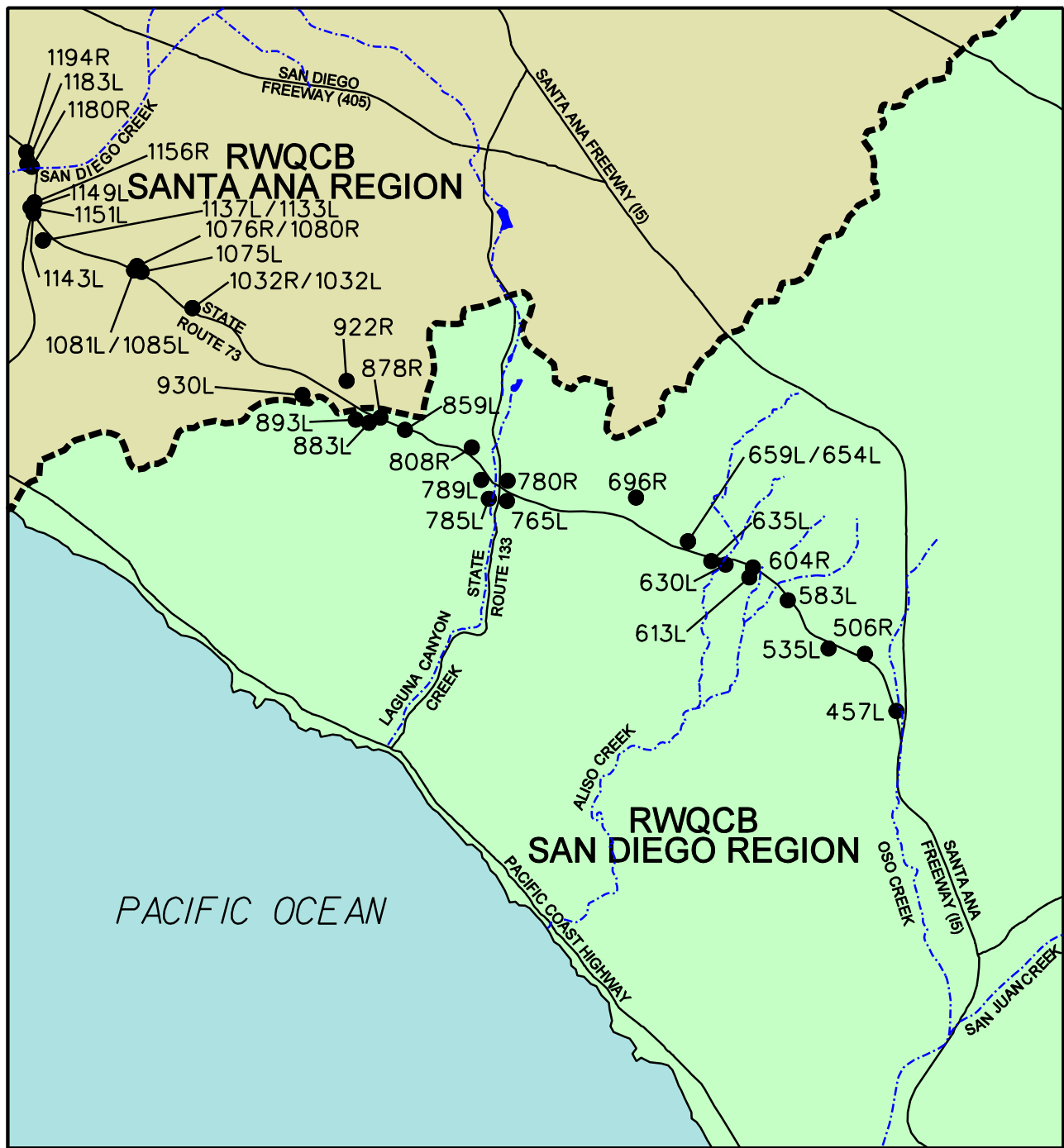
The respective receiving waters for each of the three CSF systems were visually inspected before and after storm events for conditions that may indicate eutrophication of the receiving water. The visual monitoring was performed upstream and downstream of the point where discharge from the CSF system occurred to provide a semi-quantitative assessment of potential impact on water quality and beneficial uses of the receiving waters. A detailed description of the CSF system discharge locations and the existing and potential beneficial uses of each of the receiving waters is included in the WQMP.



## **2.0 PROJECT BACKGROUND**

### **2.1 HISTORICAL INFORMATION**

The Transportation Corridor Agencies (TCA) designed and constructed SR-73. The final Environmental Impact Statement (EIS) for the project contained an adopted water quality mitigation measure requiring the development of a Runoff Management Plan (RMP) to address highway runoff from SR-73. As an element of the RMP, TCA installed 39 CSF systems along SR-73 (Figure 1). Installation was completed by October 1996 with responsibility for operation and maintenance of 38 of these CSF systems transferring to Caltrans District 12 during a period from 1997 to July 1999. The thirty-ninth CSF system receives all storm water contribution from non-Caltrans sources and is located outside Caltrans' right-of-way.



**COMPOST FILTER SYSTEMS ALONG STATE ROUTE 73**  
**COMPOST STORM WATER FILTER SYSTEM MONITORING - STATE ROUTE 73**  
 Orange County, California

Date.  
06/26/03

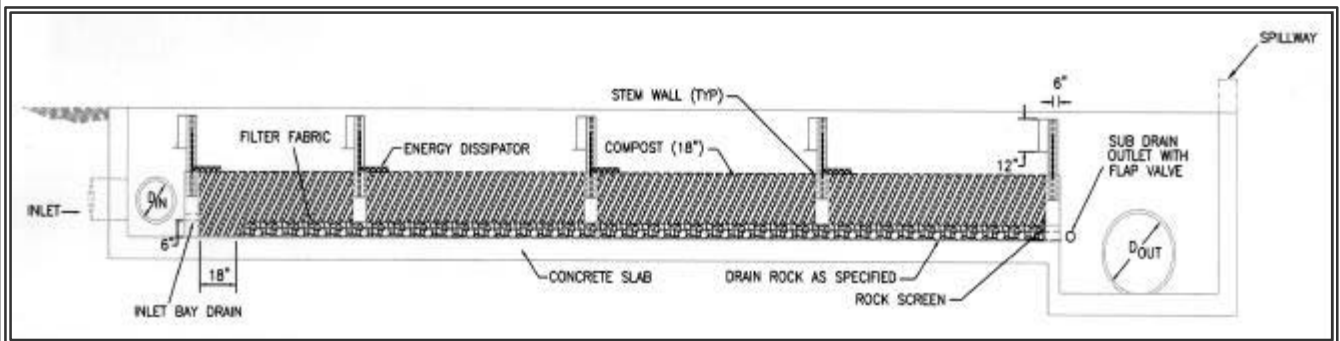
Figure  
**1**

## 2.2 BMP DESCRIPTION

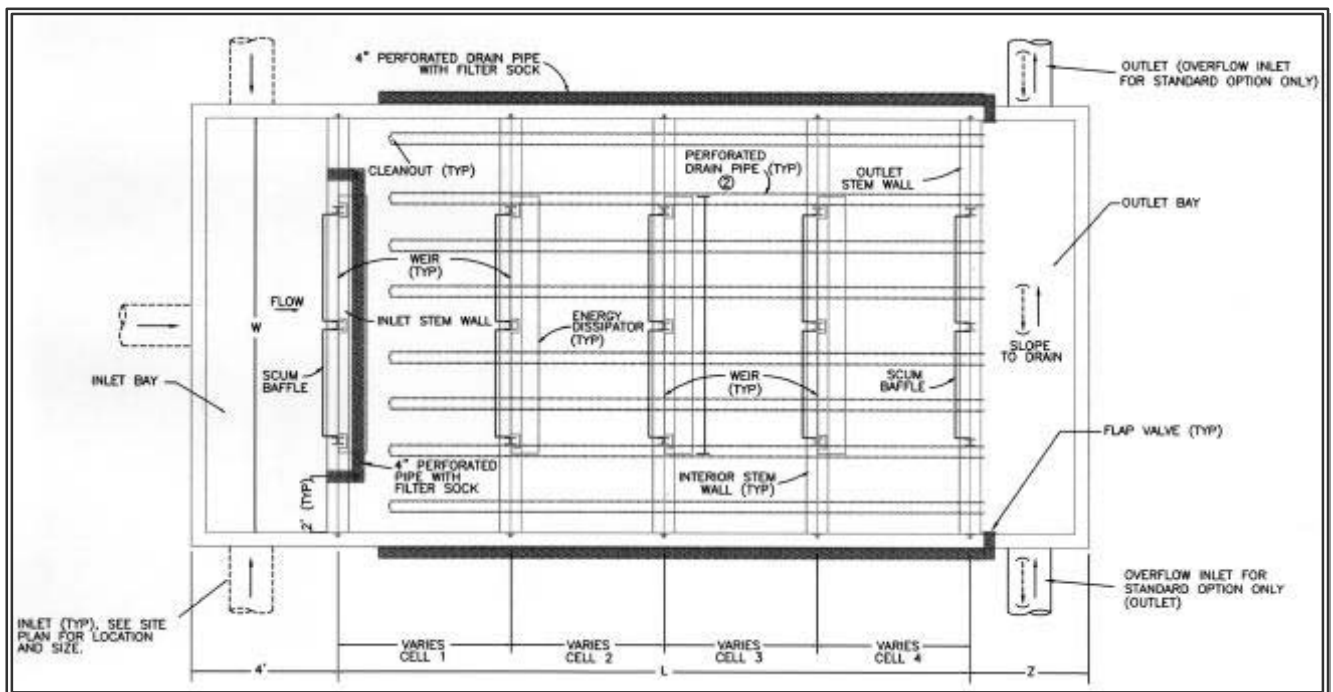
The CSF systems installed and monitored along SR-73 consist of flow equalization basins and CSF units. A report titled “*Evaluation of Compost Storm Water Filters (CSFs) Installed Along the San Joaquin Hills Transportation Corridor*” prepared by Caltrans in January 2001 (Reference 7.4) includes a detailed evaluation of each CSF system installed along SR-73.

The CSF unit is a proprietary system developed and manufactured by Stormwater Management Inc. (formerly W&H Pacific), located in Portland, Oregon. The CSF unit consists of an open, concrete box that is divided into several cells that contain compost media (Figure 2). The compost media used for treatment is a proprietary formulation made from fallen deciduous leaves. Flow enters the inlet bay at one end of the CSF unit, spills over a weir into the first cell, and filters through an 18-inch thick layer of compost. The other cells are designed to receive and treat runoff spilling over from the first cell during heavier storm events. An underdrain pipe system is placed along the floor of the concrete box to collect and convey treated flow from the unit. The underdrain is surrounded by drain rock and covered with a filter fabric. The compost is placed on top of the filter fabric. The CSF units were sized according to the flows calculated in the drainage reports (References 7.5 – 7.10). CSF units installed are designed to treat flows of one, two, four, six or eight cubic feet per second (cfs).

Prior to entering the CSF unit, storm water is directed through a flow equalization basin. Under low flow conditions, the flow equalization basins are designed to allow flow to pass through to the CSF unit with minimal detention. Under high flow conditions, storm water in excess of design flow rates will back up into the flow equalization basin, allowing the CSF unit to filter at the design rate. Each basin is also designed to contain a 100-year storm event prior to overflow.



CSF Bed Filter, Cross Sectional View



CSF Bed Filter, Plan View

Compost Storm Water Filter Unit  
State Route 73  
Orange County, California

Date  
05/22/02

Figure No.  
2



### **2.3 CEASE AND DESIST ORDER NO. 2001-198**

On July 20, 2001, the SDRWQCB issued CDO No. 2001-198, finding that Caltrans failed to use reasonable care to properly maintain and operate the 20 CSF units within their jurisdiction. The CDO required Caltrans to maintain and repair the 20 CSF systems, implement an inspection and maintenance program, and prepare and implement a WQMP. The Monitoring Report has been prepared pursuant to Directive No. 4 of the CDO.



### **3.0 PROJECT OVERVIEW**

#### **3.1 SITE SELECTION**

The CDO required the monitoring sites to be located within hydrologic sub-areas 901.13 (Aliso Creek), 901.21 (Oso Creek), and 901.12 (Laguna Canyon). One CSF system from each hydrologic sub-area was selected based on historical operation of the system, accessibility, and monitoring potential. Maintenance personnel familiar with operation of the CSF systems recommended several locations that appeared to be operating properly. A detailed review was made of each potential CSF system and three (one in each hydrologic sub-area) were selected for monitoring. The selection criteria and selected sites were identified in the WQMP.

#### **3.2 SELECTED MONITORING SITES**

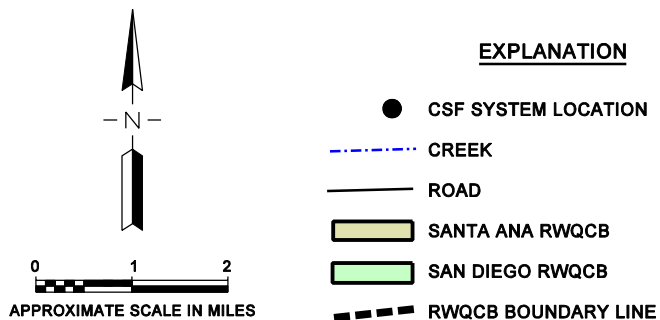
The three CSF systems selected for monitoring (CSF System 506R - Aliso Creek sub-area, CSF System 604R - Oso Creek sub-area, CSF System 785L - Laguna Creek sub-area) met the selection criteria and appeared to be operating as designed. The compost media in each of the three systems was replaced prior to the 2001/2002 wet season and the flow equalization basins were re-graded prior to the 2001/2002 and 2002/2003 wet seasons. Once sites were selected, as-built drawings and drainage plans for each system were obtained and reviewed to further evaluate the system and associated tributary areas. Table 1 summarizes the site information for the three selected sites, and Figures 3 and 4 present the project locations. The monitored CSF systems are described below.



**Table 1**  
**Site Summary**

Site ID/Filter System No.	Hydrologic Sub-Area	Monitoring Location	Monitoring Station ID	Average Annual Rainfall (in.) <sup>1</sup>	Tributary Area (acres) <sup>2</sup>
506R	901.13 (Aliso Creek)	Inlet to Basin	12-210	13.6	7.21
		Outlet from Basin/Inlet to CSF	12-211	13.6	7.45
		Outlet from CSF	12-212	13.6	7.45
		Overflow	12-213	13.6	7.45
604R	901.21 (Oso Creek)	Inlet 1 to Basin	12-214	17.9	9.38
		Inlet 2 to Basin	12-215	17.9	0.63
		Inlet 3 to Basin	12-216	17.9	0.43
		Outlet from Basin/Inlet to CSF	12-217	17.9	12.3
		Outlet from CSF	12-218	17.9	12.3
		Overflow	12-219	17.9	12.3
785L	901.12 (Laguna Canyon)	Inlet 1 to Basin	12-220	13.5	2.19
		Inlet 2 to Basin	12-221	13.5	0.37
		Outlet from Basin/Inlet to CSF	12-222	13.5	2.89
		Outlet from CSF	12-223	13.5	2.89
		Overflow	12-224	13.5	2.89

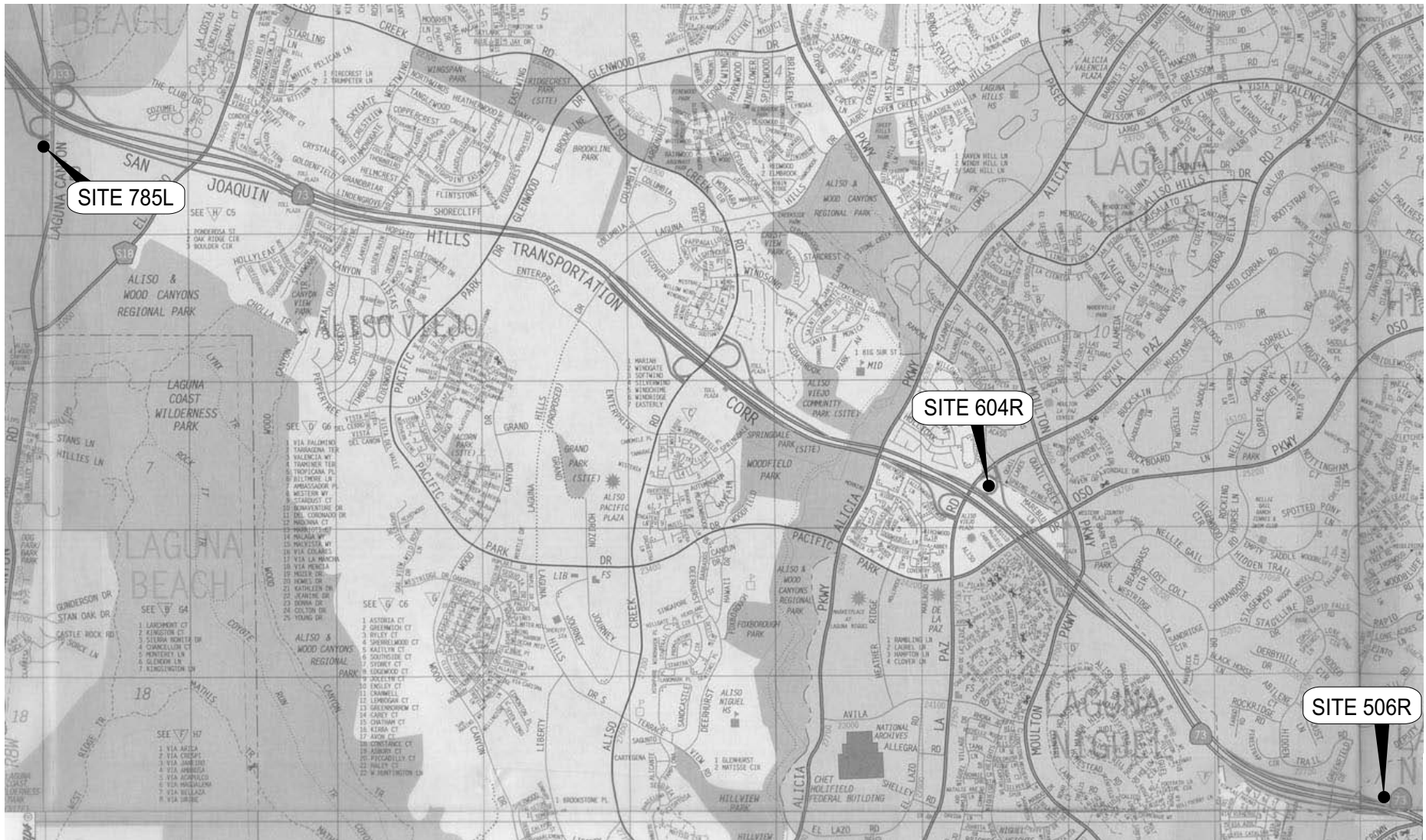
1. Average annual rainfall totals were obtained from Caltrans Water Quality Planning Tool (WQPT). The WQPT compiles rainfall data from the USGS, California Department of Water Resources, United States Weather Service, and California Division of Mines.
2. Tributary areas for basin outlets include area associated with basin itself. The area of the CSF unit was not included in the tributary area for the CSF outlets because the area associated with the CSF unit is considered insignificant in relation to the size of the tributary area.



**COMPOST FILTER MONITORING PROJECT LOCATION MAP**  
 COMPOST STORM WATER FILTER SYSTEM MONITORING - STATE ROUTE 73  
 Orange County, California

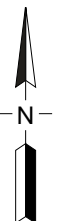
Date.  
06/26/03

Figure  
**3**



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0 1320 2640  
APPROXIMATE SCALE IN MILES



# CSF SYSTEM MONITORING LOCATIONS COMPOST STORM WATER FILTER SYSTEM MONITORING - STATE ROUTE 73 Orange County, California

Date  
06/14/02

Figure  
4



### 3.2.1 CSF SYSTEM 506R

CSF system 506R (Figure 5) is located within hydrologic sub-area 901.13 (Aliso Creek) adjacent to the northbound SR-73 at the Greenfield Road off ramp. The tributary area for 506R is approximately 7.21 acres consisting of impervious highway surface and unpaved median area. The CSF unit was designed for a treatment capacity of 2 cfs. The system consists of one inlet to the flow equalization basin with a concrete v-ditch conveying low flows through the basin to the CSF unit. The CSF unit consists of an inlet bay, two compost media cells, and an outlet bay. Monitoring systems were installed at the inlet to the flow equalization basin, the outlet of the flow equalization basin/inlet to the CSF unit, the basin overflow pipe, and the outlet of the CSF unit.

### 3.2.2 CSF SYSTEM 604R

CSF system 604R (Figure 6) is located within hydrologic sub-area 901.21 (Oso Creek) adjacent to the northbound SR-73 at La Paz Road off ramp. The tributary area for 604R is approximately 12.3 acres consisting of impervious highway, off-ramp, and street surfaces and unpaved median area. The CSF system receives contribution from a portion of La Paz Road that is outside Caltrans right-of-way. The CSF unit was designed for a treatment capacity of 6 cfs. The system consists of three inlets to the flow equalization basin with the basin graded to convey low flows through the basin to the CSF unit. The CSF unit consists of an inlet bay, three compost media cells, and an outlet bay. Monitoring systems were installed at the three inlets to the flow equalization basin, the outlet of the flow equalization basin/inlet to the CSF unit, the basin overflow pipe, and the outlet of the CSF unit.

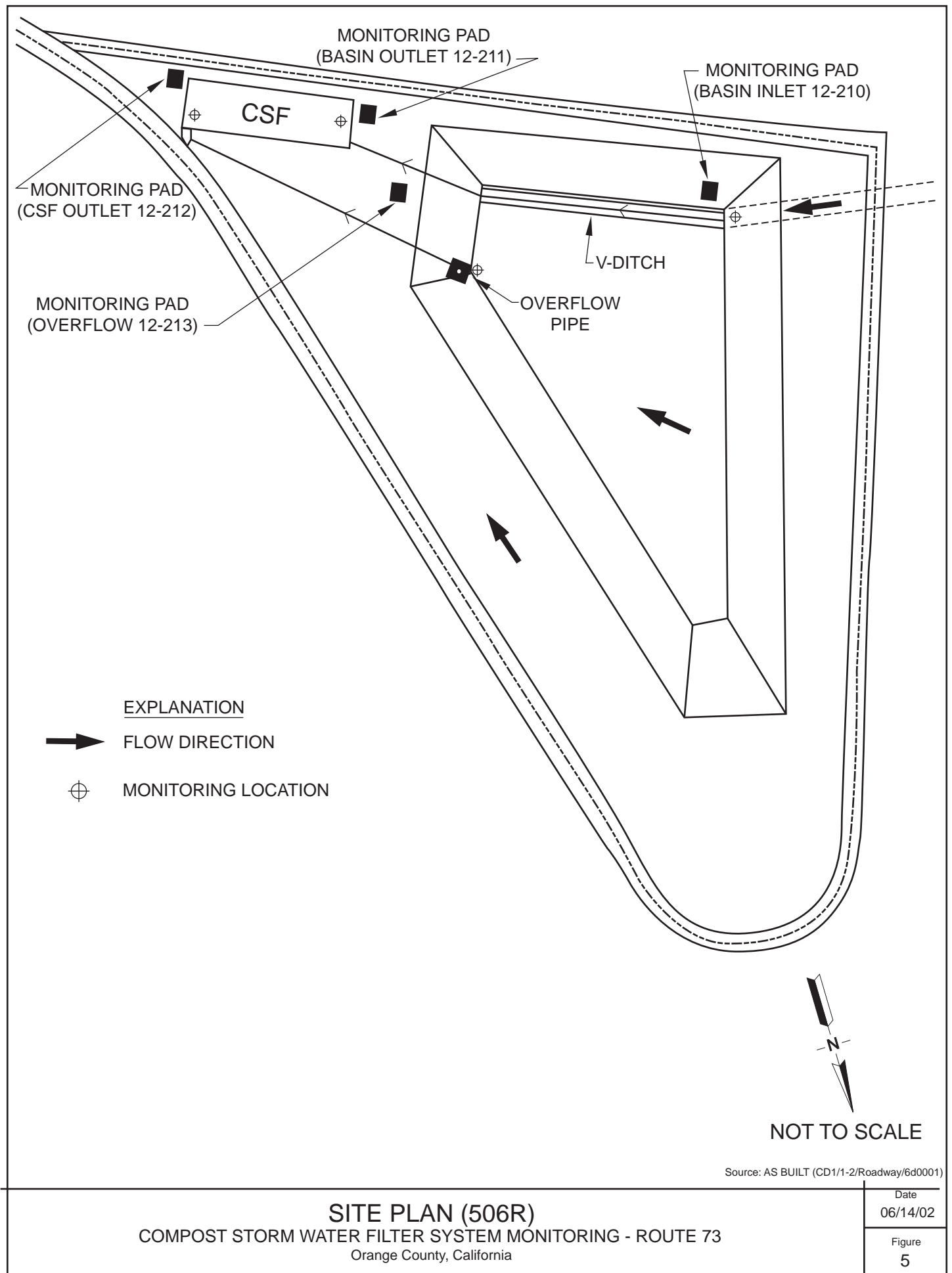
### 3.2.3 CSF SYSTEM 785L

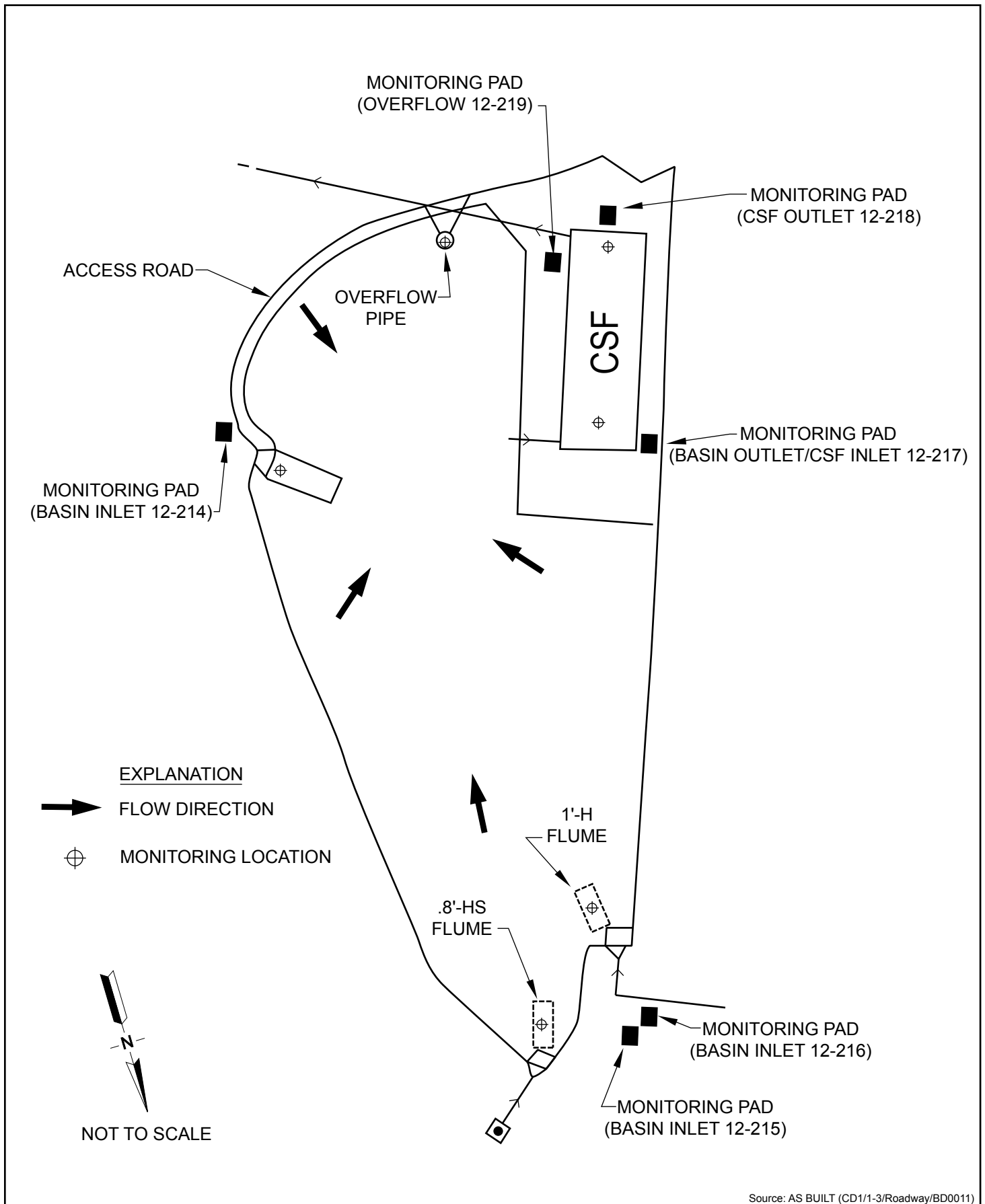
CSF system 785L (Figure 7) is located within hydrologic sub-area 901.12 (Laguna Creek) adjacent to the southbound SR-73 at the Laguna Canyon Road off ramp. The tributary area for 785L is approximately 2.89 acres consisting primarily of impervious highway and off-ramp



surface with a small contribution from the pervious roadside along Laguna Canyon Road. The CSF unit was designed for a treatment capacity of 1 cfs. The system consists of two inlets to the flow equalization basin with the basin graded to convey low flows through the basin to the CSF unit.

The CSF unit consists of an inlet bay, two compost media cells, and an outlet bay. Monitoring systems were installed at the two inlets to the flow equalization basin, the outlet of the flow equalization basin/inlet to the CSF unit, the basin overflow pipe, and the outlet of the CSF unit.

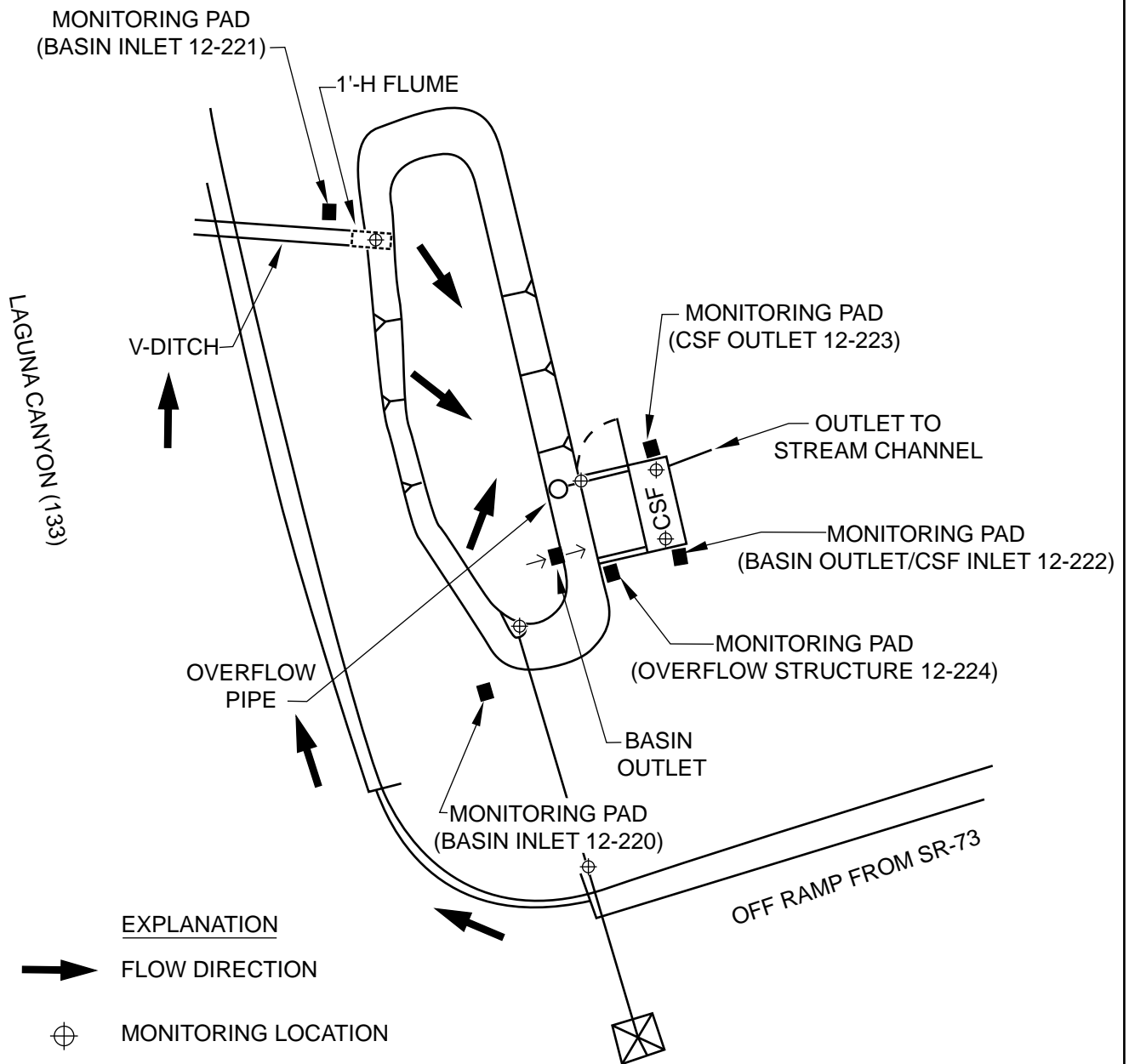




**SITE PLAN (604R)**  
 COMPOST STORM WATER FILTER SYSTEM MONITORING - STATE ROUTE 73  
 Orange County, California

Date  
 06/14/02

Figure  
 6



Source: AS BUILT (CD1/2-3/Roadway/Bd0011)

**SITE PLAN (785L)**  
**COMPOST STORM WATER FILTER SYSTEM MONITORING - STATE ROUTE 73**  
 Orange County, California

Date  
 06/14/02

Figure  
 7



## **4.0 FIELD MONITORING**

### **4.1 MONITORING SYSTEM DESIGN AND CONSTRUCTION**

As-built drawings and drainage reports were reviewed to design the monitoring program for the selected CSF systems. In addition to review of design information, the three selected CSF systems were inspected to establish the current operating conditions. Flow rates and depth were calculated for 2, 5, and 25-year storm events for each monitoring location based on survey results. Understanding the flow conditions at each monitoring location was needed to select the proper flow measurement equipment, described in the subsections below.

### **4.2 MONITORING SYSTEM CONSTRUCTION**

Following selection of the appropriate flow measurement devices for each monitoring location, monitoring equipment was ordered and installed prior to the 2001/2002 wet season. Monitoring systems consisted of an automated sampler, flow meter, flow measurement device, rain gauge, system enclosure, monitoring platform, and associated conduit for sampler tubing and flow meter connections. Wood or pre-cast concrete monitoring platforms were used for each monitoring station, and fiberglass enclosures were installed on the platforms to protect the automated monitoring equipment.

Monitoring sites requiring the installation of flumes required additional retrofit. Flumes manufactured with fiberglass approach sections were set in concrete footings with adjustable mounting systems for proper leveling. Fiberglass was utilized for a smooth transition from the existing drainage structure to the flume approach section. A description of each monitoring system is provided below.



#### 4.2.1 CSF SYSTEM 506R

##### 12-210 (Basin inlet)

This monitoring location sampled flow into the flow equalization basin at the basin inlet. An area-velocity bubbler sensor was mounted in the corrugated plastic inlet pipe at a distance of approximately 150 feet from its outlet to avoid backwater and allow more accurately measured flow. The discharge pipe flows directly to a concrete v-ditch that directs flow through the basin to the CSF under low flow conditions. The sample intake strainer was mounted near the inlet pipe discharge point into the v-ditch.

##### 12-211 (Basin outlet/CSF inlet)

The monitoring location sampled flow into the CSF unit from the flow equalization basin. Monitoring station 12-211 was installed in the inlet bay of the CSF. The existing weir and inlet bay drains of the CSF unit were used with a bubbler sensor to measure flow. In order to accurately measure flow into the CSF, a head/discharge relationship curve was calculated for the existing inlet bay weir. The head/discharge relationship curve was adjusted to account for bypass flows through the two four-inch inlet bay drains. The flow through the inlet bay drains was estimated based on a falling head permeability test. The sampler intake was mounted in the inlet bay at an elevation below the weir crest.

##### 12-212 (CSF outlet)

This monitoring location sampled effluent from the CSF unit. A compound weir plate with a 45-degree v-notch and bubbler sensor were installed at the discharge pipe. The sampler intake was mounted in the outlet bay of the CSF at an elevation equal to the weir crest. The weir plate was constructed with a drain plug near the base of the weir to allow for dewatering of the outlet bay following storm events.



#### 12-213 (Basin overflow structure)

This monitoring location sampled flow through the overflow structure of the flow equalization basin. Based on a survey conducted at the site, discharge through the overflow structure is expected to occur in a 25-year storm event or greater. The existing notch in the overflow structure was used with a bubbler sensor to measure flow. The sampler intake was mounted within the overflow pipe.

#### 4.2.2 CSF SYSTEM 604R

#### 12-214 (Basin inlet 1)

This monitoring location sampled flow into the flow equalization basin at one of the three basin inlets, a 36-inch concrete pipe. Due to reduced basin capacity, there was a backwater condition several hundred feet up the inlet pipe for most storms anticipated at this site. To avoid possible interference caused by backwater, the area-velocity bubbler sensor was mounted approximately 100 feet up the inlet pipe just below the last input to the existing drainage pipe. The sample intake was mounted near the inlet pipe discharge point.

#### 12-215 (Basin inlet 2)

This monitoring location sampled flow into the flow equalization basin at one of the three basin inlets, an 18-inch corrugated plastic pipe. A 0.8-foot HS-flume and bubbler sensor were installed at the discharge point from the pipe. A survey of the site and hydraulic calculations showed that there would be no backwater condition at the installed invert elevation. The flume extended approximately six feet from the existing pipe and was supported approximately one foot off the existing basin floor. Existing rip-rap reduced scour and erosion caused by discharge from the flume. The sampler intake was placed near the discharge point from the pipe prior to the flume.



### 12-216 (Basin inlet 3)

This monitoring location sampled flow into the flow equalization basin at one of the three basin inlets, a 24-inch corrugated plastic pipe. A 1-foot H-flume and bubbler sensor were installed at the discharge point from the pipe. A survey of the site and hydraulic calculations showed that there would be no backwater condition at the installed invert elevation. The flume extended approximately eight feet from the existing pipe and was supported approximately one foot off the existing basin floor. Existing rip-rap reduced scour and erosion caused by discharge from the flume. The sampler intake was placed near the discharge point from the pipe prior to the flume.

### 12-217 (Basin outlet/CSF inlet)

This monitoring location sampled flow into the CSF unit from the flow equalization basin. Monitoring station 12-217 was installed in the inlet bay of the CSF. The existing weir and inlet bay drains of the CSF unit were used with a bubbler sensor to measure flow. In order to accurately measure flow into the CSF, a head/discharge relationship curve was calculated for the existing inlet bay weir. The head/discharge relationship curve was adjusted to account for bypass flows through the two four-inch inlet bay drains. The flow through the inlet bay drains was estimated based on a falling head permeability test. The sampler intake was mounted in the inlet bay at an elevation below the weir crest.

### 12-218 (CSF outlet)

This monitoring location sampled effluent from the CSF unit. Monitoring station 12-218 was installed in the outlet bay of the CSF. A compound weir plate with a 45-degree v-notch and bubbler sensor was installed at the discharge pipe. The sampler intake was mounted in the outlet bay of the CSF at an elevation equal to the weir crest. The weir plate was constructed with a drain plug near the base of the weir to allow for dewatering of the outlet bay following storm events.



#### 12-219 (Basin overflow structure)

This monitoring location sampled flow through the overflow structure of the flow equalization basin. Due to decreased basin capacity (determined by a survey of the basin) caused by accumulated sediment in the basin, the overflow structure was expected to receive flow during an event equal to or greater than the two-year 24-hour storm event. The existing notch in the overflow structure was used with a bubbler sensor to measure flow with the sampler intake mounted inside the overflow pipe.

#### 4.2.3 CSF SYSTEM 785L

##### 12-220 (Basin inlet 1)

This monitoring location sampled flow into the flow equalization basin from one of two basin inlets, a 24-inch concrete pipe. Due to anticipated backwater conditions, an area-velocity bubbler sensor was mounted approximately 100 feet up the concrete pipe to measure flow with the sample intake mounted near the discharge point from the pipe.

##### 12-221 (Basin inlet 2)

This monitoring location sampled flow into the flow equalization basin from one of two basin inlets, an asphalt v-ditch. A 1-foot H-flume and bubbler sensor were installed on the lower portion of the v-ditch where it discharges into the basin. A survey of the site and hydraulic calculations showed that there would be no backwater condition at the installed invert elevation. The flume extended approximately eight feet from the existing v-ditch and was supported several feet off the existing basin floor. Rip-rap was placed below the flume outlet to reduce scour and erosion. The sampler intake was placed near the discharge point from the v-ditch.

##### 12-222 (Basin outlet/CSF inlet)

This monitoring location sampled flow into the CSF unit from the flow equalization basin. Monitoring station 12-222 was installed in the inlet bay of the CSF. The existing weir and inlet bay drains of the CSF were used with a bubbler sensor to measure flow. In order to accurately



measure flow into the CSF, a head/discharge relationship curve was calculated for the existing inlet bay weir. The head/discharge relationship curve was adjusted to account for bypass flows through the two four-inch inlet bay drains. The flow through the inlet bay drains was estimated based on a falling head permeability test. The sampler intake was mounted in the inlet bay at an elevation below the weir crest.

#### 12-223 (CSF outlet)

This monitoring location sampled effluent from the CSF unit. A compound weir plate with a 45-degree v-notch and bubbler sensor was installed at the discharge pipe. The sampler intake was mounted in the outlet bay of the CSF at an elevation equal to the weir crest. The weir plate was constructed with a drain plug near the base of the weir to allow for dewatering of the outlet bay following storm events.

#### 12-224 (Basin overflow)

This monitoring location sampled flow through the overflow structure of the flow equalization basin. Discharge through the overflow structure was only expected to occur during an event equal to or greater than the 100-year 24-hour storm event. An area-velocity bubbler sensor was installed in the overflow pipe from the overflow structure to the CSF outlet bay with the sampler intake mounted inside the overflow pipe.

### **4.3 STORM EVENT MONITORING**

Storm events were selected for monitoring during the 2001/2002 and 2002/2003 wet seasons based on the criteria set forth in the WQMP, which consisted of mobilizing monitoring crews for storm events with a minimum probability of occurrence of 50%, and a minimum predicted rainfall depth of 0.25 inches. Storm events were monitored between October 1, 2001, and April 30, 2002 and again from October 1, 2002 through April 30, 2003. When a storm event was forecast to meet the mobilization criteria, a two person crew was mobilized to each of the three CSF systems. The crews were responsible for collecting grab samples and monitoring the collection of samples by the automated equipment throughout the storm event.



Due to the slow draining of CSF system 604R (further described in Section 5.1), sampling was performed throughout the period of time the flow equalization basin drained through the CSF unit (up to six weeks). To meet analytical holding time limitations, a monitoring crew mobilized to the site every 24-36 hours to collect a set of sample bottles and install a new set. These daily samples were delivered to the laboratory and short holding time parameters were analyzed (pH, specific conductance, nitrate, nitrite, and ortho-phosphate) while the remainder of the sample was held for additional compositing. Approximately every seven days, the daily samples were composited and the full analytical suite outlined in the WQMP was run. For the short holding time parameters, a weighted average concentration was calculated using daily flow measurements. The slow draining primarily occurred during the 2001/2002 storm season. The system drained within approximately three to four days on average during the 2002/2003 storm season.

#### **4.4 RECEIVING WATER MONITORING**

The receiving waters were visually inspected before and after storm events for conditions that may indicate eutrophication of the receiving water. Eutrophication is a natural process that occurs in all water bodies and is the result of a gradual accumulation of nutrients, accompanied by increased levels of primary production (Reference 7.12). However, discharges of organic wastes and/or nutrients from anthropogenic sources may accelerate this natural process. Eutrophication may result in the production of excessive amounts of phytoplankton and/or periphyton which may create aesthetic problems such as increased turbidity, formation of algal mats, odor problems associated with decomposing plant biomass, or “cultural eutrophication” (References 7.11, 7.12, 7.13). The classical approach for monitoring eutrophication and nutrient-related problems includes an assessment of algal blooms, periphyton growth on the water surface, and odor (Reference 7.13). These monitoring components have been used since the 1940s in areas such as Bays on Long Island and Lake Washington, where excessive nutrients were suspected to cause accelerated eutrophication. This semi-quantitative assessment of



potential receiving water impacts was completed by observing and documenting the existence and extent of the following:

- biological growth (algal film),
- odor,
- color (phytoplankton growth),
- turbidity,
- floating materials,
- flow, and
- other physical characteristics.

Observations for the past two wet seasons were documented on receiving water monitoring forms and are included in Appendix B.

#### **4.5 QUALITY ASSURANCE/QUALITY CONTROL**

Quality assurance/quality control procedures were implemented in accordance with the WQMP, including using Caltrans Automated Data Validation (ADV) Version 2.1 (version 3.1 for data collected during 2002/2003 monitoring season) software during the data validation process. The laboratory analysis, field and laboratory quality assurance/quality control samples and procedures, data management and validation protocols, and data reporting conducted during this study are summarized in Appendix C.



## 5.0 MONITORING RESULTS

### 5.1 STORM EVENT DESCRIPTIONS

Storm events were monitored throughout the 2001/2002 and 2002/2003 wet seasons. A storm event summary for each monitoring site is included in Tables 2 through 14. Hydrographs for each storm event from which a sample was collected are included in Appendix D. Hydrographs show flow, rainfall, aliquot collection, and grab sample collection information. Samples were not collected from the two of the three flow equalization basin overflow monitoring sites (12-213 and 12-224) because overflow conditions did not occur during the 2001/2002 or 2002/2003 wet seasons. The following sub-sections describe the storm event monitoring for the 2001/2002 and 2002/2003 wet seasons.

#### *2001/2002 Wet Season*

Between October 1, 2001 and April 30, 2002, a total of eight storm events (November 12, November 24, November 29, December 3, December 21, January 28, March 7, and March 17) met the mobilization criteria as described in Section 4.3 of this report and were monitored. Rainfall event totals for CSF system 506R ranged from 0.18 inches (March 17 storm event) to 0.92 inches (November 24 storm event). Rainfall event totals for CSF system 604R ranged from 0.16 inches (December 14 storm event) to 0.90 inches (November 24 storm event). Rainfall event totals for CSF system 785L ranged from 0.23 inches (November 29 storm event) to 0.89 inches (November 24 storm event). The majority of storms occurring during the 2001/2002 wet season were less than 0.5 inches.

For CSF system 604R during the 2001/2002 wet season, two additional storm events (December 14, 2001 and December 29, 2001) were monitored that did not meet mobilization criteria. These storm events were monitored because CSF system 604R drains slowly and the basin had residual storm water from previous events at the time storm events not meeting the mobilization criteria were forecast. It was necessary to collect a composite sample of the commingled events to accurately characterize the influent and effluent from the system. The elevation of the flow



equalization basin in relation to the inlet bay weir elevation only allowed water to flow over the inlet bay weir under high flow conditions when sufficient head built up in the basin. Detailed storm event information is included in Tables 2 through 14 and rainfall event totals are depicted on Figure 8.

During the 2001/2002 wet season the majority of flow through CSF system 604R occurred through the two, four-inch inlet bay drains rather than over the inlet bay weir and vertically through the CSF unit. Flow that occurs through the inlet bay drains is directed through approximately 18-inches of compost media and then into the underdrain system. The flow rate through the inlet bay drains is substantially less than the flow rate over the inlet bay weir. CSF systems 506R and 785L exhibited similar characteristics under low flow conditions where flow occurred through the inlet bay drains rather than over the weir and into the horizontal filter bed. For all but the largest storm event of the season (November 24) at CSF system 506R, 50% or more of the storm event flow bypassed the inlet bay weir. For all but two storm events (November 24 and January 28) at CSF system 785L, 40% of the flow bypassed the inlet bay weir. The configuration of the inlet bay drains is indicated on Figure 2. A summary of the approximate percent of flow above and below the inlet bay weir is included in Table 15.

#### *2002/2003 Wet Season*

Between October 1, 2002 and April 30, 2003, a total of six storm events (November 8, December 16, December 20, February 24, March 16, and April 14) met the mobilization criteria as described in Section 4.3 of this report and were monitored. Rainfall event totals for CSF system 506R ranged from 0.7 inches (December 20 storm event) to 4.96 inches (March 16 storm event). Rainfall event totals for CSF system 604R ranged from 0.67 inches (December 20 storm event) to 4.22 inches (March 16 storm event). Rainfall event totals for CSF system 785L ranged from 0.95 inches (December 20 storm event) to 4.71 inches (March 16 storm event). The majority of storms occurring during the 2002/2003 wet season were greater than one inch. Detailed storm event information is included in Tables 2 through 14 and rainfall event totals are depicted on Figure 8.



As described above, the majority of storms occurring during the 2002/2003 wet season had much higher rainfall totals than the 2001/2002 wet season and consequently, a greater percentage of flow discharged over the inlet bay weir as opposed to the 2001/2002 wet season where the majority of flow was through the inlet bay drains. A summary of the approximate percent of flow above and below the inlet bay weir is included in Table 15.

## **5.2 ANALYTICAL RESULTS**

Analytical results for each monitoring location are summarized in Tables 16 through 28. Results were compiled to determine the quality of runoff from SR-73 and to assess the performance of the CSF systems. Storm water samples were analyzed for the pollutants of concern identified in the CDO (total and dissolved chromium, total and dissolved copper, total and dissolved lead, total and dissolved nickel, total and dissolved zinc, total dissolved solids, total suspended solids, nitrate, nitrite, total kjeldahl nitrogen, ammonia, total phosphorous, dissolved phosphorous, oil & grease, total polycyclic aromatic hydrocarbons, fecal coliform, and total coliform) and additional parameters outlined in the WQMP.

## **5.3 RECEIVING WATER OBSERVATIONS**

The semi-quantitative assessment of receiving waters was based on visual observations of receiving waters before and after storm events. Observations were conducted through the last storm event on March 17, 2002 for the 2001/2002 wet season and through the last storm event on April 14, 2003 for the 2002/2003 wet season. A detailed description of the CSF system discharge locations is included in the WQMP and summarized below along with results of the semi-quantitative assessment.



### 5.3.1 OSO CREEK

#### Hydrologic Sub-Area 901.21

CSF system 506R discharges runoff into the Oso Creek Channel. The effluent is routed along a series of pipes and open channels where it is combined with other non-Caltrans runoff before discharging into the channel. The Oso Creek Channel discharge location is a concrete channel with low flow, no or low turbidity, abundant plant life, and a small percentage of algal growth along rocks both upstream and downstream of the discharge location. Throughout the past two wet season (2001/2002 and 2002/2003), the visual characteristics of the observed upstream, downstream, and discharge location remained the same. There was no indication that the nutrients discharged from the CSF system resulted in eutrophication, and therefore no indication that the discharge impaired the water quality and beneficial uses of the receiving waters associated with Oso Creek Channel.

### 5.3.2 Aliso Creek

#### Hydrologic Sub-Area 901.13

CSF system 604R discharges runoff into a section of Aliso Creek. The effluent is routed along a series of concrete pipes and open channels where it is combined with other non-Caltrans runoff before discharging into the creek. The Aliso Creek discharge location is a channel with a sandy bottom, low to medium flow, no or low turbidity, and no algal film or green discoloration. The monitored upstream segment was observed with algal film and was characterized as a concrete channel. There was no indication that the nutrients discharged from the CSF system resulted in eutrophication, and therefore no indication that the discharge impaired the water quality and beneficial uses of the receiving waters associated with Aliso Creek.

### 5.3.3 LAGUNA CANYON CREEK

#### Hydrologic Sub-Area 901.12

CSF system 785L discharges runoff directly into Laguna Canyon Creek. The Laguna Canyon Creek discharge location is a dry concrete channel with occasional low flow, thick tall grasses, and dead vegetation. A few observational periods reported standing water with surface film at



the discharge point or monitored downstream location. During observational periods with algal film downstream or at the discharge point, thick algal growth areas occurred at the monitored upstream section. There was no indication that the nutrients discharged from the CSF system resulted in eutrophication, and therefore no indication that the discharge impaired the water quality and beneficial uses of the receiving waters associated with Laguna Canyon Creek.

#### **5.4 VECTOR CONTROL MONITORING AND ABATEMENT**

The Orange County Vector Control District (OCVCD) was contracted to monitor the three CSF systems sampled during the 2001/2002 and 2002/2003 wet seasons. Vector control was a concern due to the design of the CSF units and the extended detention of storm water in CSF system 604R. The inlet bay of the CSF unit is designed to drain down to approximately six-inches of standing water. The remaining six-inches of water eventually evaporate. The OCVCD monitored the three systems weekly between mid-February and late-May of 2002 and late-January and mid-May 2003. The CSF systems were monitored for the number of potential and actual mosquito sources and larval samples were collected and analyzed to determine mosquito species. The results of inspections performed over the past two wet seasons are discussed below:

##### *2001/2002 Wet Season*

CSF system 506R contained standing water with active mosquito breeding on each of the 14 site visits. CSF system 604R contained standing water with active mosquito breeding on two of the 14 site visits. CSF system 785L contained standing water with active mosquito breeding on seven of the 14 inspections (Reference 7.14). Treatment was performed twice (February 22 and once between May 15-22) to control mosquitoes using Altosid XR Briquettes (2.1% methoprene). The size of the areas treated and amounts of control agents used for treatment were documented during each inspection.

##### *2002/2003 Wet Season*

CSF system 506R contained standing water with active mosquito breeding on eleven of the thirteen site visits. CSF system 604R contained standing water with active mosquito breeding on



eleven of the thirteen site visits. CSF system 785L contained standing water with active mosquito breeding on eight of the thirteen inspections (Reference 7.15, 7.16). Treatment was performed five times at site 506R (January 23, February 18, March 27, April 3, and April 30), four times at site 604R (January 23, March 6, April 3, and April 30), and four times at site 785L (January 23, March 19, April 15, and May 16) to control mosquitoes using Altosid Briquettes (8.6% methoprene). The size of the areas treated and amounts of control agents used for treatment were documented during each inspection.



## **6.0 SUMMARY OF FINDINGS**

### **6.1 QUALITY OF RUNOFF FROM STATE ROUTE 73**

The quality of runoff from SR-73 was evaluated using the analytical results from the monitoring stations installed at the inlets to the CSF system flow equalization basins. Samples from a total of six monitoring stations comprised untreated highway flow (12-210, 12-214, 12-215, 12-216, 12-220, and 12-221). Analytical results and summary statistics for these monitoring sites are presented in Tables 16, 19, 20, 21, 25 and 26. These results were also utilized as a baseline to compare pollutant removal/export of the flow equalization basins, CSF units, and CSF systems. Table 29 contains summary statistics describing the combined distribution of samples collected from all six highway monitoring points. Seventy-four grab samples and 81 composite samples were collected from the highway runoff monitoring sites during the 2001/2002 and 2002/2003 wet seasons.

### **6.2 ABILITY OF SYSTEMS TO REMOVE POLLUTANTS OF CONCERN**

In order to evaluate the performance of the flow equalization basins, CSF units, and CSF systems for the removal of pollutants of concern, the analytical results from the past two wet seasons were used to evaluate pollutant removal/addition characteristics. Statistical analysis performed on the full suite of analytes listed in the WQMP included descriptive statistics (Tables 16-28), calculated using the Caltrans data analysis tool (DAT), and box-and-whisker plots (Figures 9-41). For data sets containing some censored (non-detected) values, the DAT tool uses the regression on order statistics (ROS) method. The ROS method assigns concentrations to the censored data points. For data sets containing several censored values, the estimated mean and/or median may be less than the analytical reporting limit.

Based on review of the analytical results and descriptive statistical analysis for samples collected during the past two wet seasons, several pollutants of concern (nitrate, ortho-phosphorous, total phosphorous, total suspended solids, copper [total and dissolved], lead [total and dissolved] and



zinc [total and dissolved]) were selected for further statistical and non-statistical analysis.

Additional statistical analysis included statistical testing to assess whether flow equalization basins or CSF units increased or decreased the concentrations of pollutants. For this testing, the pair-wise t-test was used. In this test, a t statistic is calculated for the difference between related values. In this instance, the related values were the influent and effluent concentrations for the equalization basins and the CSF units. A separate test was performed for each pollutant and for each system component (flow equalization basin or CSF filter) at each location. The null hypothesis for the test was that the influent and effluent concentrations were the same (i.e., the *true* difference between influent and effluent is zero). The alternate hypothesis was that the influent and effluent concentrations were different. A rejection of the null hypothesis indicates that, with 95% confidence, the influent and effluent concentrations are different. The t-test also provides an estimate of the mean increase or decrease in the effluent concentration relative to the influent concentration. The results of the t-tests are presented in the following sections. A complete set of t-tests is contained in Tables 30-32. The dataset for the t-tests includes analytical data only for storms for which both influent and effluent samples were collected.

Additional non-statistical analysis consisted of plotting constituent concentration for each system component against initial (highway runoff) concentration for each storm sample. These plots provide a means for visual analysis of possible trends. These concentration versus highway runoff concentration plots were generated and are presented in the following sections.



## Nitrate

Nitrate concentrations consistently increased through the CSF units at each of the three monitoring sites over the past two wet seasons. T-tests performed on the nitrate data (Table 33) indicate that, with 95% confidence, the null hypothesis (no difference between influent and effluent) was rejected. In each case, the mean difference (calculated as influent concentration minus effluent concentration) is negative, indicating that the filter effluent concentration, on average, is higher than the influent concentration. The estimated mean increase across the CSF units was 0.5 to 1.5 mg/L.

T-test results for the basin components of the CSF systems are not consistent. The data support the conclusion that the basin effluent nitrate concentration of system 604R is significantly less than the basin influent (highway runoff) nitrate concentration. For the basins of systems 506R and 785L, the influent and effluent concentrations are not significantly different.

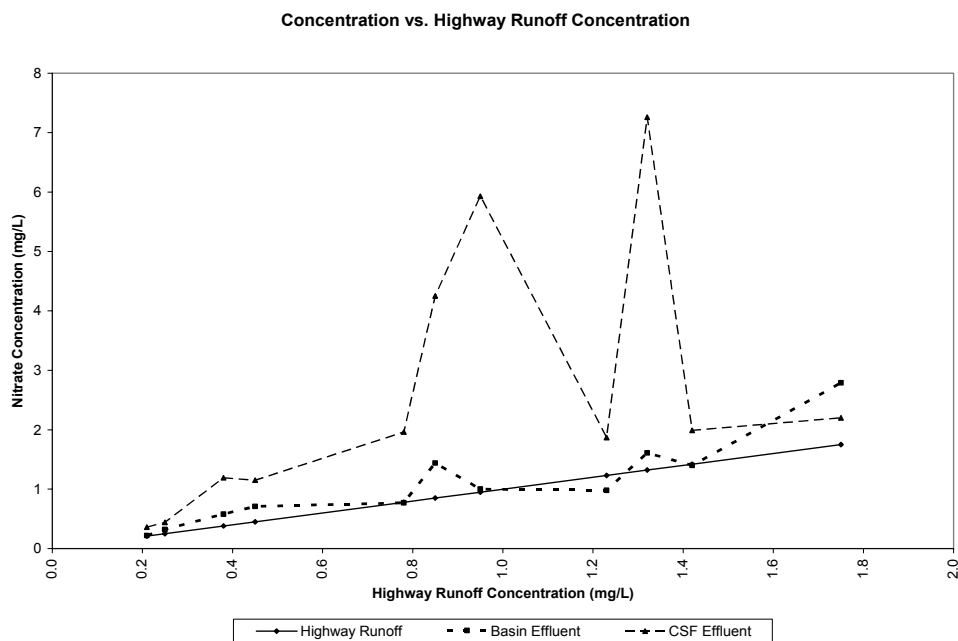
**Table 33. T-Test Results for Nitrate<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (mg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-0.44	0.03
	604R	10	+ <sup>5</sup>	0.04	0.48
	785L	11	.	-0.01	0.10
CSF Filter	506R	11	- <sup>6</sup>	-2.90	-0.15
	604R	10	-	-1.48	-0.27
	785L	11	-	-0.78	-0.26

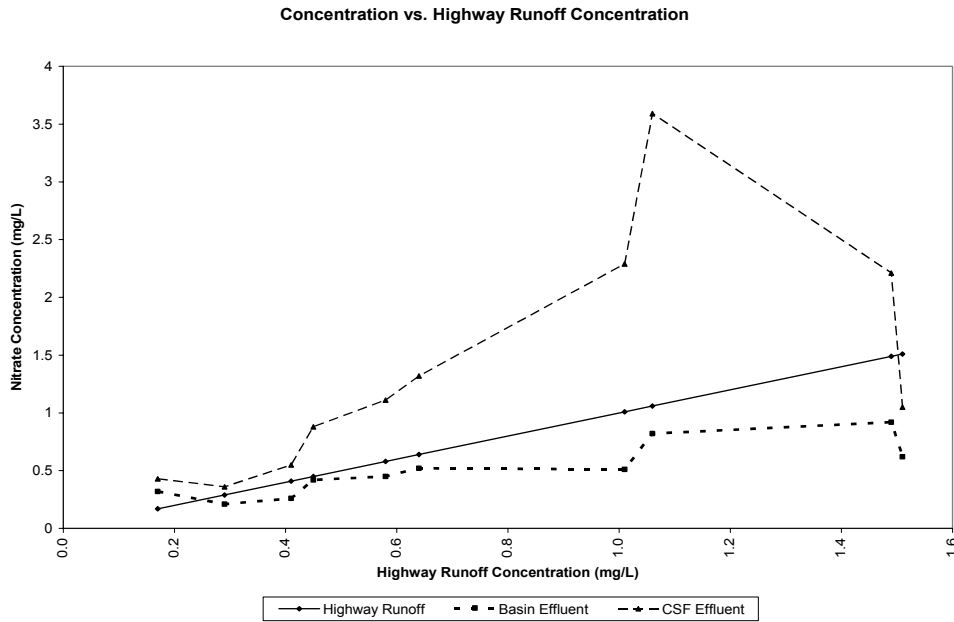
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. mg/l = milligrams per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.
6. (-) With 95% confidence, the null is rejected. The mean sample difference is negative indicating that the influent concentration tends to be less than the effluent concentration.

Figures 42-44 below show constituent concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. For all three CSF systems, the CSF filter effluent concentration for most storms appears to be significantly greater than the filter influent (basin effluent) concentration. T-test results presented in Table 33 confirm this observation. For CSF system 604R, the basin effluent concentration appears to be generally less than the basin influent (highway runoff) concentration.

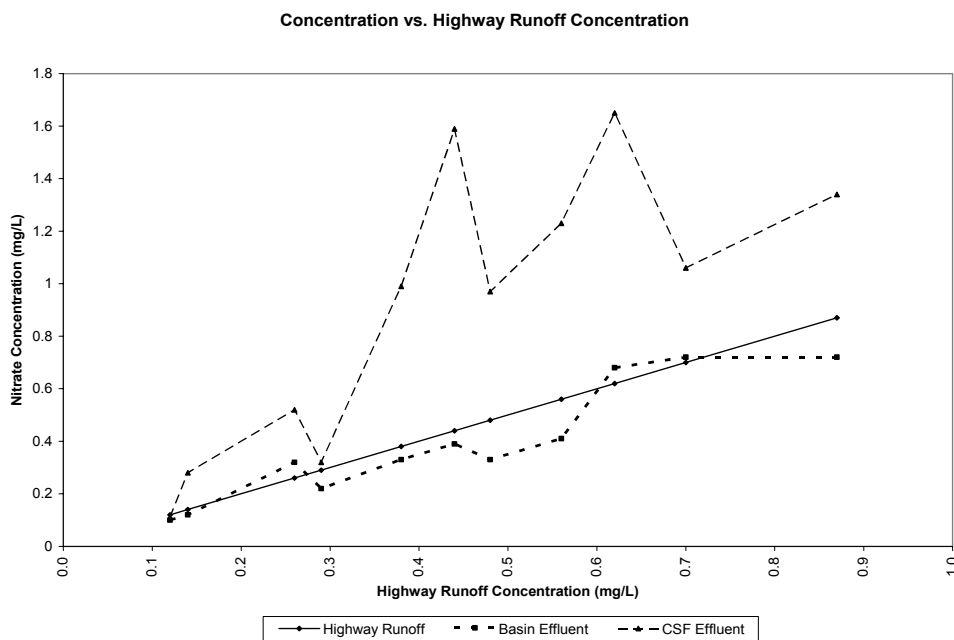
**Figure 42. Nitrate Concentration Compared to Initial (Highway Runoff) Concentration – 506R**



**Figure 43. Nitrate Concentration Compared to Initial (Highway Runoff) Concentration – 604R**



**Figure 44. Nitrate Concentration Compared to Initial (Highway Runoff) Concentration – 785L**





### Total Kjeldahl Nitrogen

The basins and CSF units appear to have no effect on the concentration of TKN at any of the three locations. t-Tests performed on the TKN data (Table 34) indicate that the null hypothesis (there is no difference between influent and effluent) is not rejected.

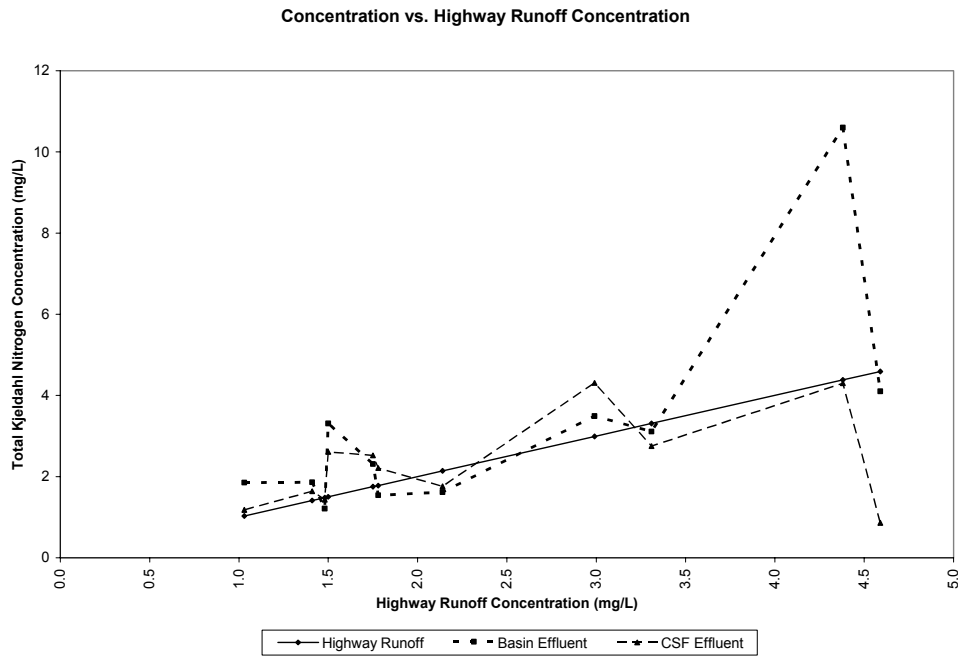
**Table 34. T-Test Results for Total Kjeldahl Nitrogen<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (mg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-2.08	0.51
	604R	10	.	-0.28	0.81
	785L	11	.	-0.50	1.36
CSF Filter	506R	11	.	-0.56	2.27
	604R	10	.	-0.44	0.42
	785L	11	.	-0.50	0.12

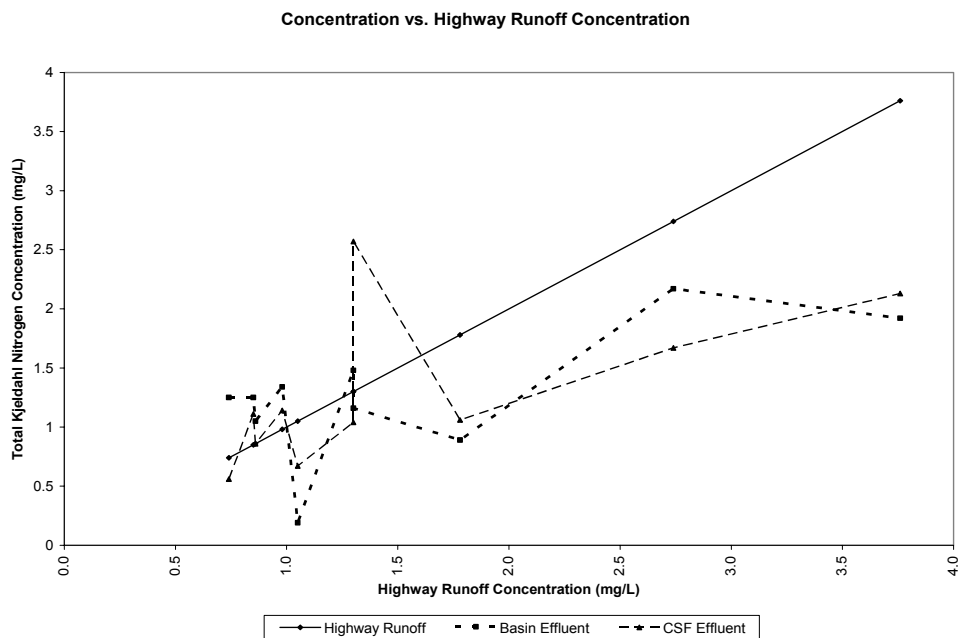
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. mg/l = milligrams per liter.
4. (.) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.

Figures 45-47 below show TKN concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. Contrary to the results of the t-test, the plots for 604R and 785L suggest that at high highway runoff concentration, the basins make a difference; however, this assessment is qualitative and based on limited data.

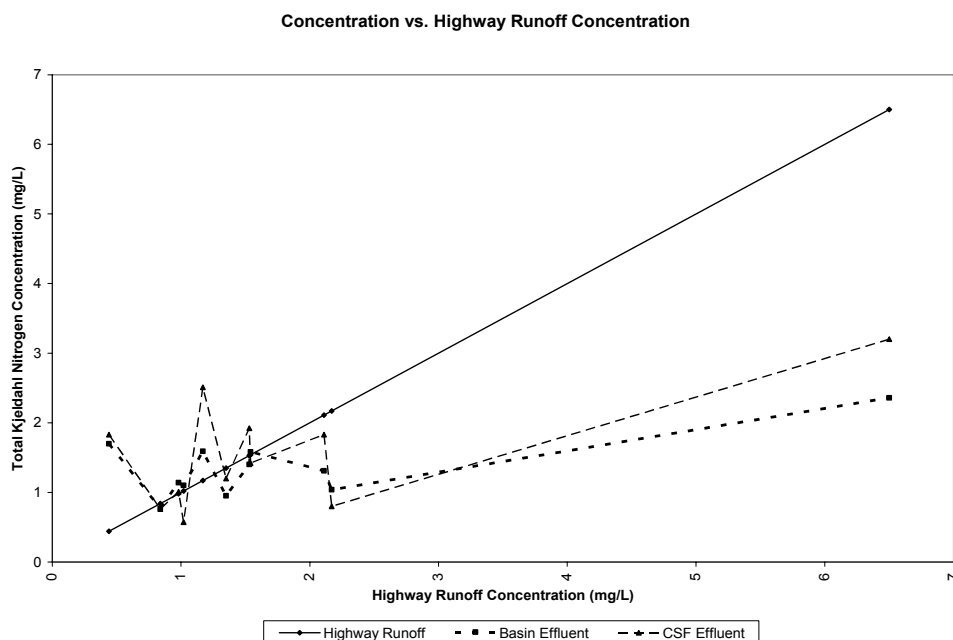
**Figure 45. Total Kjeldahl Nitrogen Concentration Compared to Initial (Highway Runoff) Concentration – 506R**



**Figure 46. Total Kjeldahl Nitrogen Concentration Compared to Initial (Highway Runoff) Concentration – 604R**



**Figure 47. Total Kjeldahl Nitrogen Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Dissolved Ortho-Phosphate

Ortho-phosphate concentrations do not appear to consistently decrease or increase through the basins or CSF units at the three monitoring sites over the past two wet seasons. t-Tests performed on ortho-phosphate data for one of the three CSF units (785L) indicated that, with 95% confidence, the null hypothesis (there is no difference between influent and effluent) is rejected. The mean difference is negative indicating that, on average, the filter effluent concentration is higher than the filter influent concentration. The mean increase in concentration is about 0.08 mg/L. t-Tests performed on the ortho-phosphate data for the remainder of the basins and filters indicate that the null hypothesis (there is no difference between influent and effluent) is not rejected.



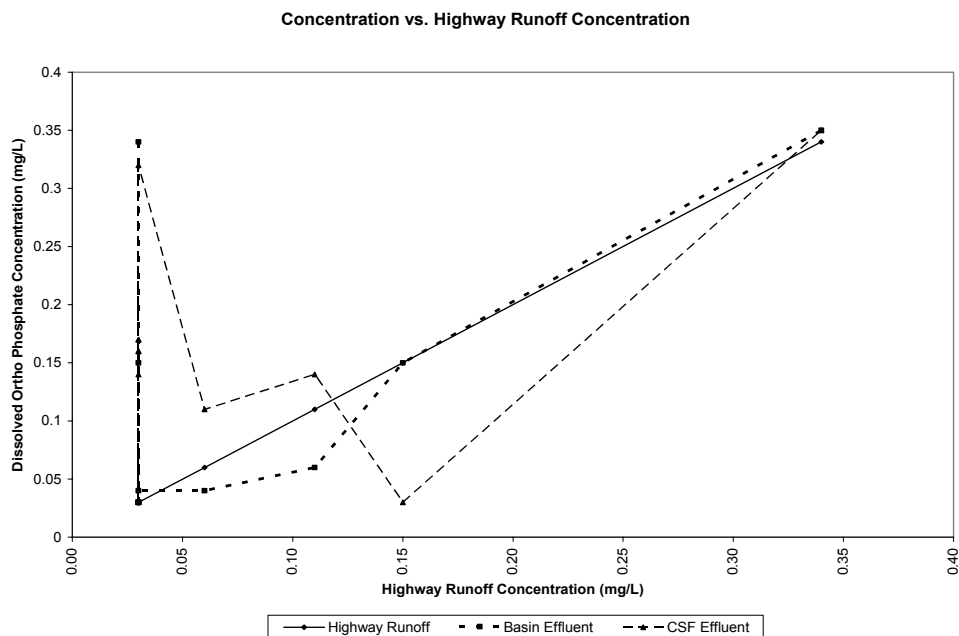
**Table 35. T-Test Results for Ortho-Phosphate<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (mg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-0.10	0.03
	604R	10	.	-0.45	0.15
	785L	11	.	-0.02	0.08
CSF Filter	506R	11	.	-0.13	0.04
	604R	10	.	-0.20	0.23
	785L	11	- <sup>5</sup>	-0.13	-0.04

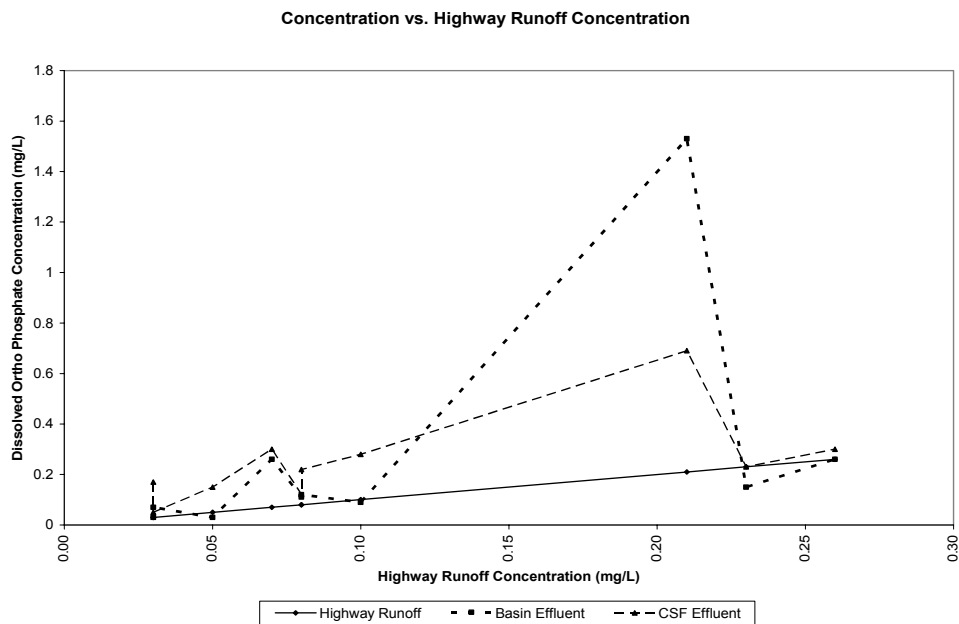
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. mg/l = milligrams per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (-) With 95% confidence, the null is rejected. The mean sample difference is negative indicating that the influent concentration tends to be less than the effluent concentration.

Figures 48-50 below show ortho-phosphate concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. No significant trends are noted.

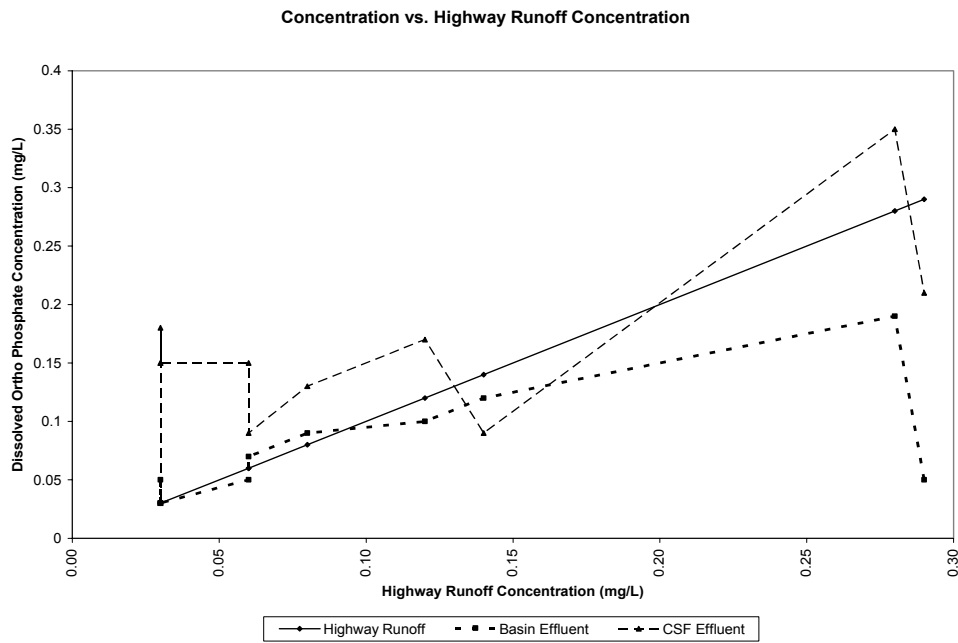
**Figure 48. Dissolved Ortho-Phosphate Concentration Compared to Initial (Highway Runoff) Concentration – 506R**



**Figure 49. Dissolved Ortho-Phosphate Concentration Compared to Initial (Highway Runoff) Concentration – 604R**



**Figure 50. Dissolved Ortho-Phosphate Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Total Phosphorous

Total phosphorous concentrations do not appear to consistently decrease or increase through the basins or CSF units at the three monitoring sites over the past two wet seasons. Only two of six t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent). At system 604R, the basin effluent concentration is estimated to be, on average, about 0.05 mg/L less than the influent concentration. At system 785L, the filter effluent is estimated to be, on average, about 0.07 mg/L greater than the influent concentration. For the other system components, influent and effluent concentration was not significantly different.



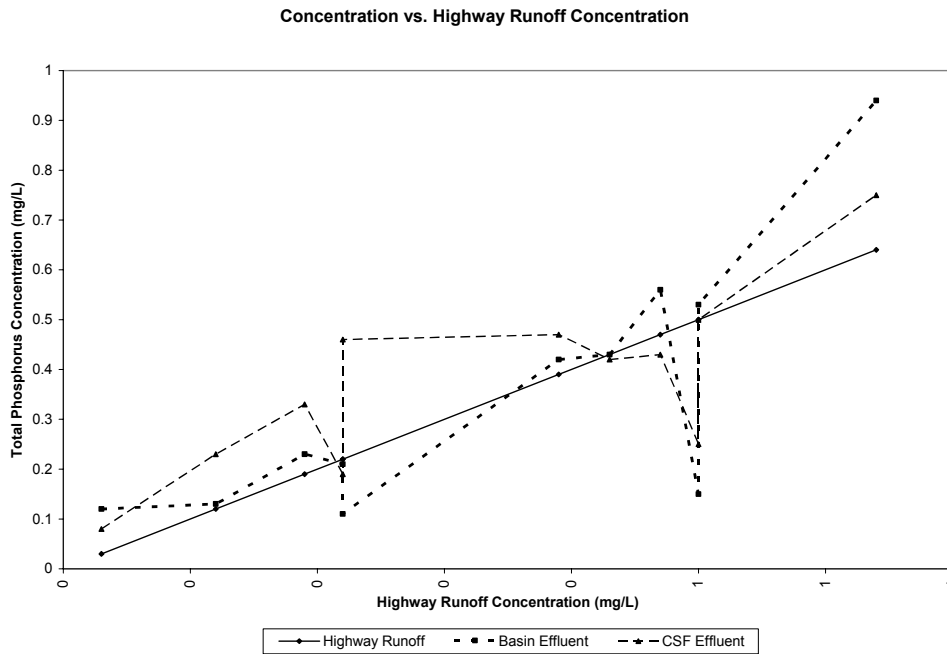
**Table 36. T-Test Results for Total Phosphorous<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (mg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-0.12	0.09
	604R	10	+ <sup>5</sup>	0.01	0.08
	785L	11	.	-0.02	0.16
CSF Filter	506R	11	.	-0.12	0.07
	604R	10	.	-0.12	0.01
	785L	11	- <sup>6</sup>	-0.12	-0.02

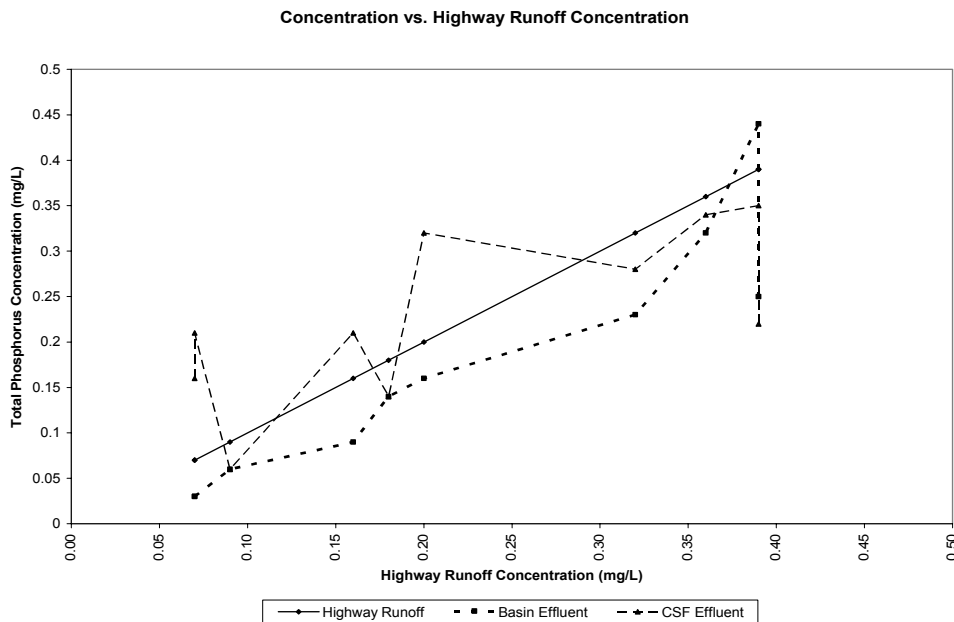
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. mg/l = milligrams per liter.
4. (.) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.
6. (-) With 95% confidence, the null is rejected. The mean sample difference is negative indicating that the influent concentration tends to be less than the effluent concentration.

Figures 51-53 below show total phosphorus concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. No consistent trends are noted.

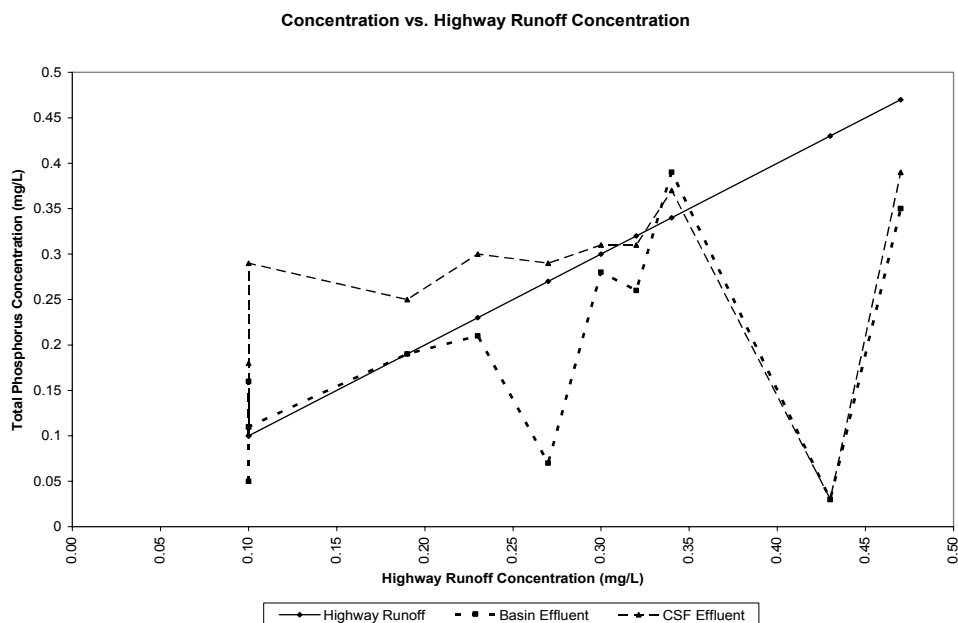
**Figure 51. Total Phosphorous Concentration Compared to Initial (Highway Runoff) Concentration – 506R**



**Figure 52. Total Phosphorous Concentration Compared to Initial (Highway Runoff) Concentration – 604R**



**Figure 53. Total Phosphorous Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Total Suspended Solids

Total suspended solids concentrations do not appear to consistently decrease or increase through the basins at the three monitoring sites over the past two wet seasons. For two of three CSF filters (at systems 604R and 785L) t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent). At system 604R, the filter effluent concentration is estimated to be, on average, about 13 mg/L less than the influent concentration. At system 785L, the filter effluent is estimated to be, on average, about 23 mg/L less than the influent concentration. For the other system components, influent and effluent concentration was not significantly different.



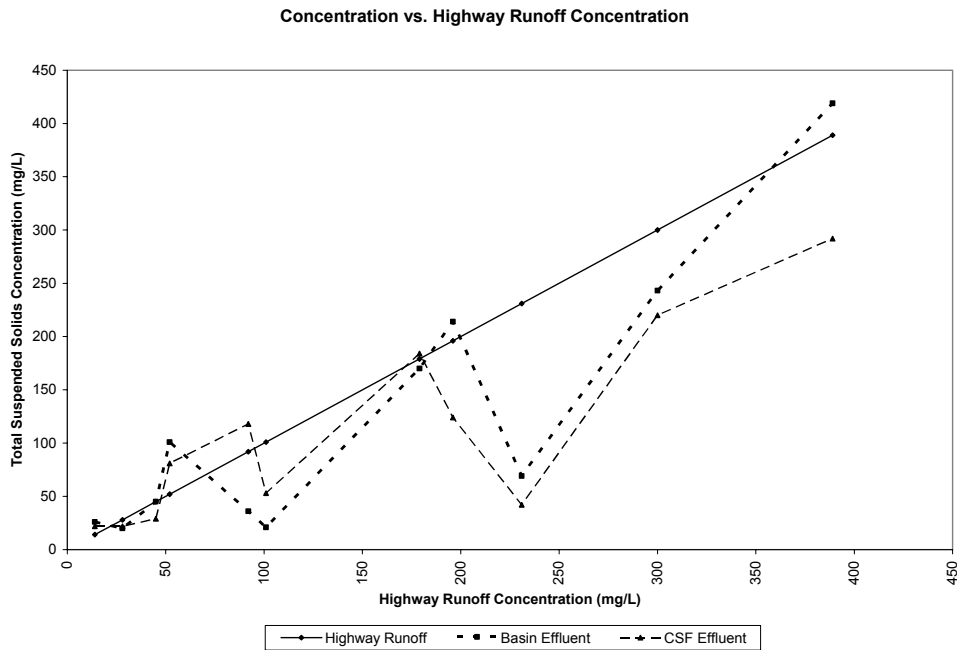
**Table 37. T-Test Results for Total Suspended Solids<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (mg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-16.80	64.62
	604R	10	.	-3.82	47.08
	785L	11	.	-20.30	28.35
CSF Filter	506R	11	.	-21.50	53.68
	604R	10	+ <sup>5</sup>	0.02	26.24
	785L	11	+	2.15	43.48

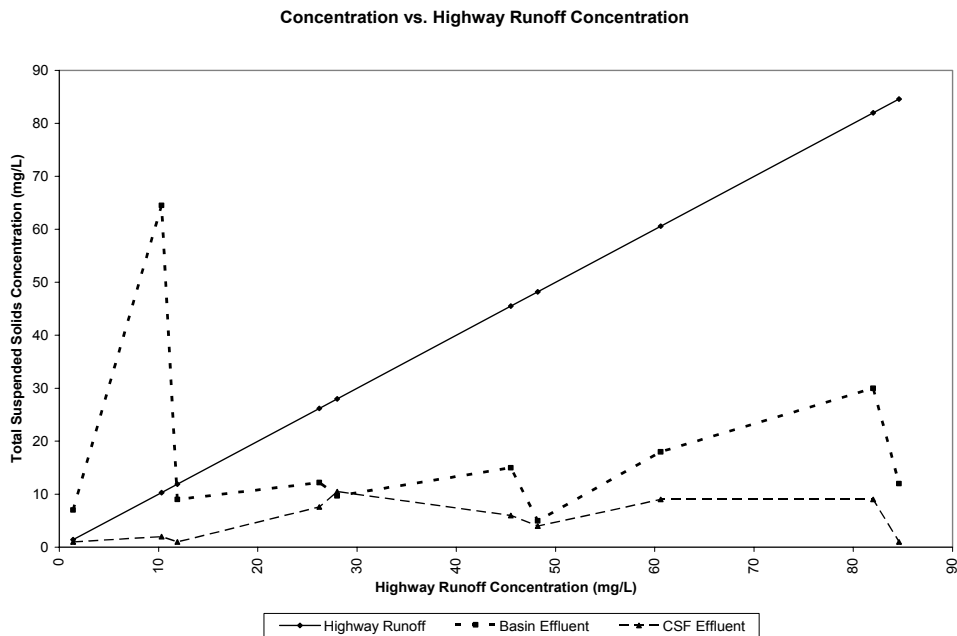
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. mg/l = milligrams per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 54-56 below show total suspended solids concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. In general, filter effluent concentration for system 604R appears to be less than filter influent (basin effluent) concentration, particularly for the highest initial (highway runoff) concentrations. These observations are consistent with the t-test results. The basin at 604R appears to reduce total suspended solids concentrations at higher highway runoff concentrations, which is inconsistent with the t-test results.

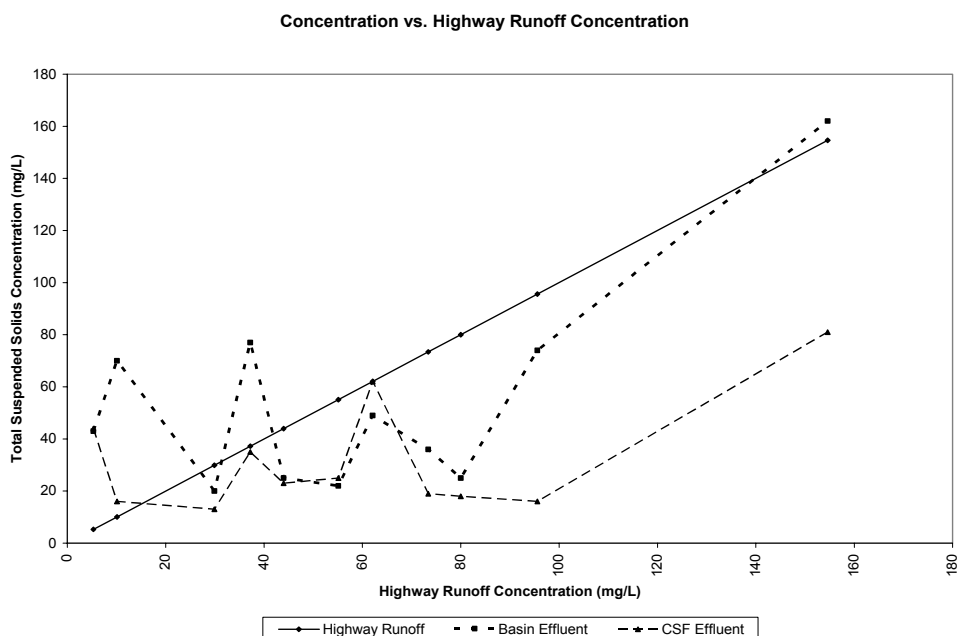
**Figure 54. Total Suspended Solids Concentration Compared to Initial (Highway Runoff) Concentration – 506R**



**Figure 55. Total Suspended Solids Concentration Compared to Initial (Highway Runoff) Concentration – 604R**



**Figure 56. Total Suspended Solids Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Total Copper

Total copper concentrations do not appear to consistently decrease or increase through the basin or CSF unit of the 506R system over the past two wet seasons. For systems 604R and 785L, the t-tests (Table 38) suggest that, in general, total copper concentration is reduced in the basins and the filters. At system 604R, the basin effluent concentration is estimated to be, on average, about 4.4 µg/L less than the influent concentration, and the filter effluent concentration is estimated to be, on average, about 1.9 µg/L, less than the influent concentration. At system 785L, the basin effluent is estimated to be, on average, about 6.0 µg/L less than the influent concentration, and the filter effluent is estimated to be, on average, about 1.9 µg/L greater than the influent concentration.

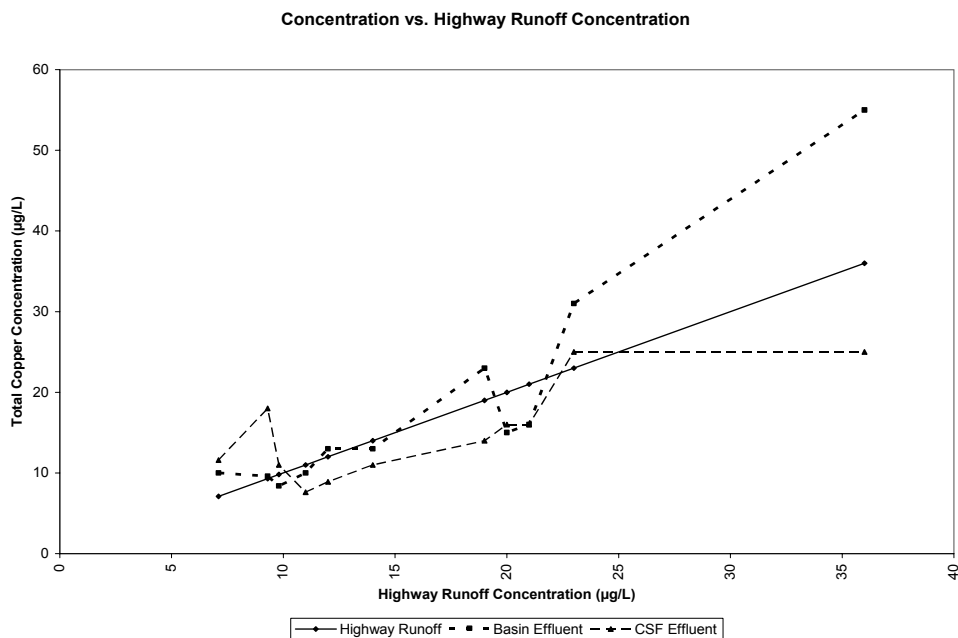
**Table 38. T-Test Results for Total Copper<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (µg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-6.55	2.58
	604R	10	+ <sup>5</sup>	1.18	7.72
	785L	11	+	0.54	11.42
CSF Filter	506R	11	.	-3.03	10.28
	604R	10	+	0.24	3.60
	785L	11	+	0.46	3.36

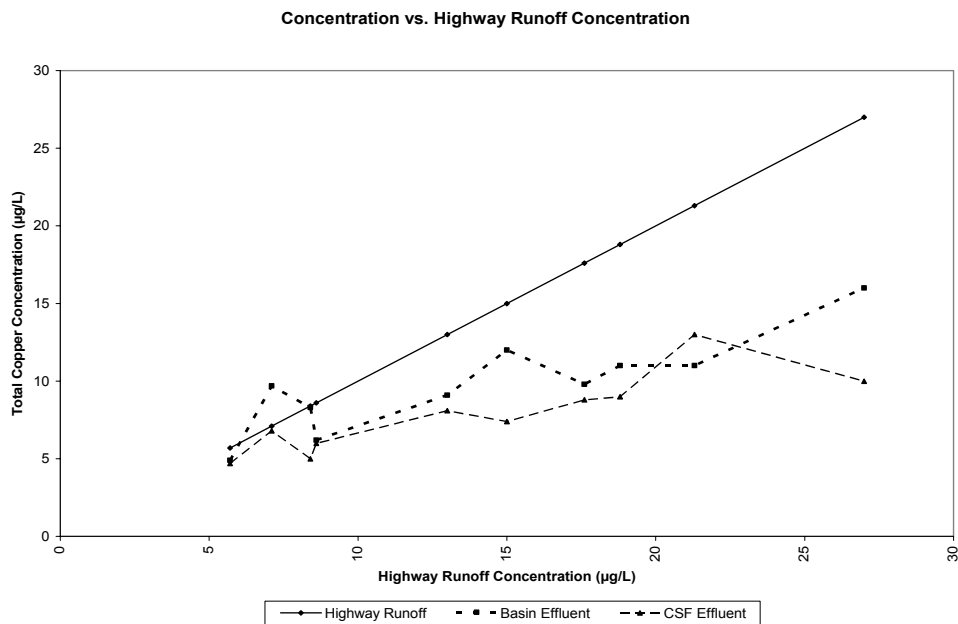
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. µg/l = micrograms per liter.
4. (.) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 57-59 below show total copper concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. For systems 604R and 785L, basin effluent concentration appears to be consistently less than highway runoff basin influent (highway runoff) concentration. These observations are confirmed by the t-tests. For these same basins, the t-tests suggest that filter effluent concentration is significantly less than filter influent (basin effluent) concentration. That trend is not as apparent, perhaps because the mean concentration decrease through the filter is less than the mean concentration decrease through the basin.

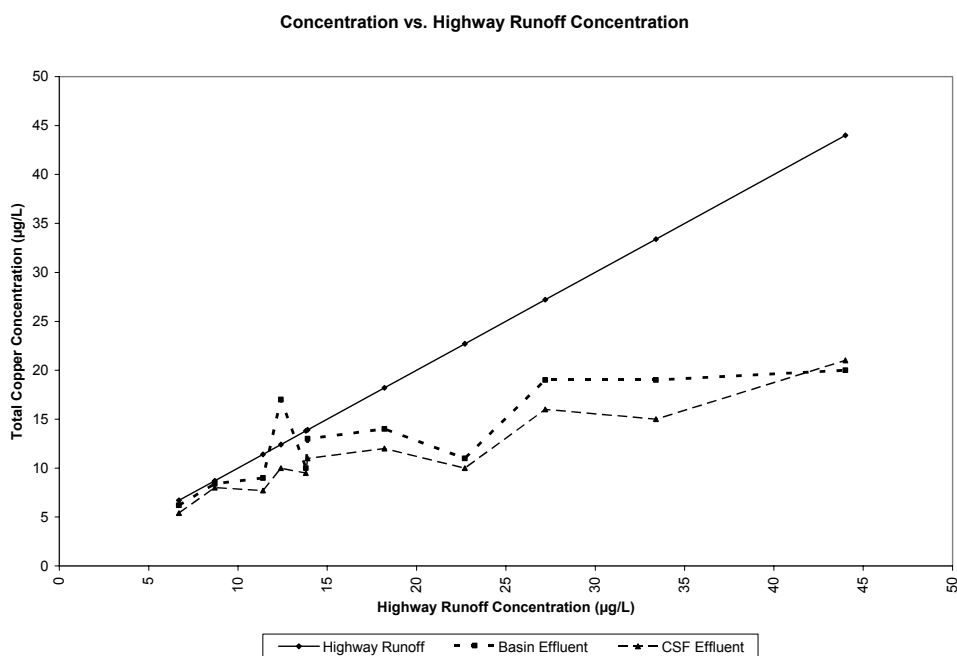
**Figure 57. Total Copper Concentration Compared to Initial (Highway Runoff)  
Concentration – 506R**



**Figure 58. Total Copper Concentration Compared to Initial (Highway Runoff)  
Concentration – 604R**



**Figure 59. Total Copper Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Dissolved Copper

Dissolved copper concentrations do not appear to consistently decrease or increase through the basins or CSF units at the three monitoring sites over the past two wet seasons. Only one of six t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent). At system 604R, the basin effluent concentration is estimated to be, on average, about 2.4 µg/L less than the influent concentration. For the other system components, influent and effluent concentration was not significantly different.



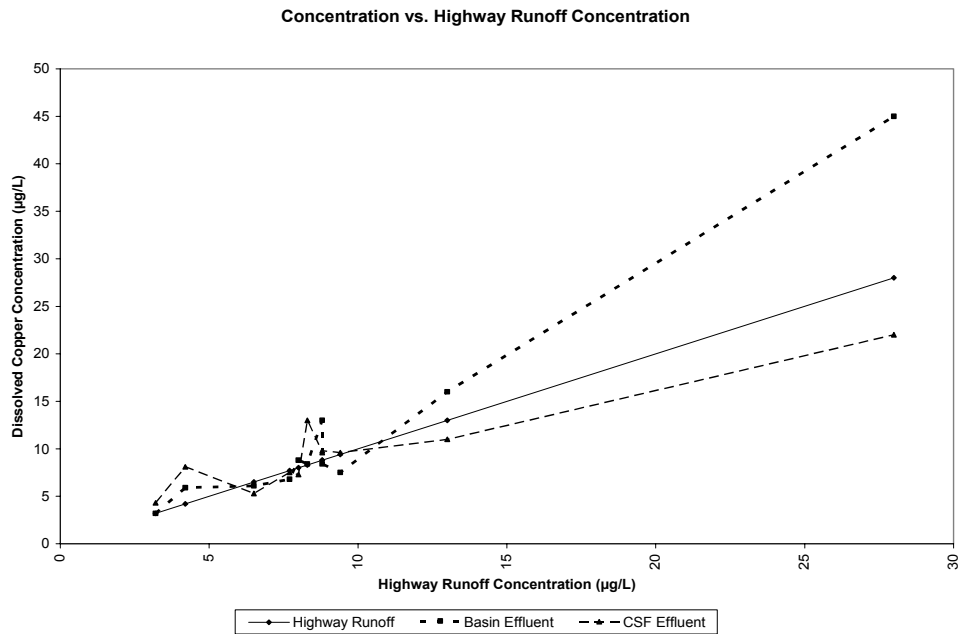
**Table 39. T-Test Results for Dissolved Copper<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> ( $\mu\text{g/l}$ ) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-5.63	1.42
	604R	10	+ <sup>5</sup>	0.32	4.56
	785L	11	.	-0.83	5.21
CSF Filter	506R	11	.	-3.07	7.00
	604R	10	.	-0.80	1.14
	785L	11	.	-0.63	1.48

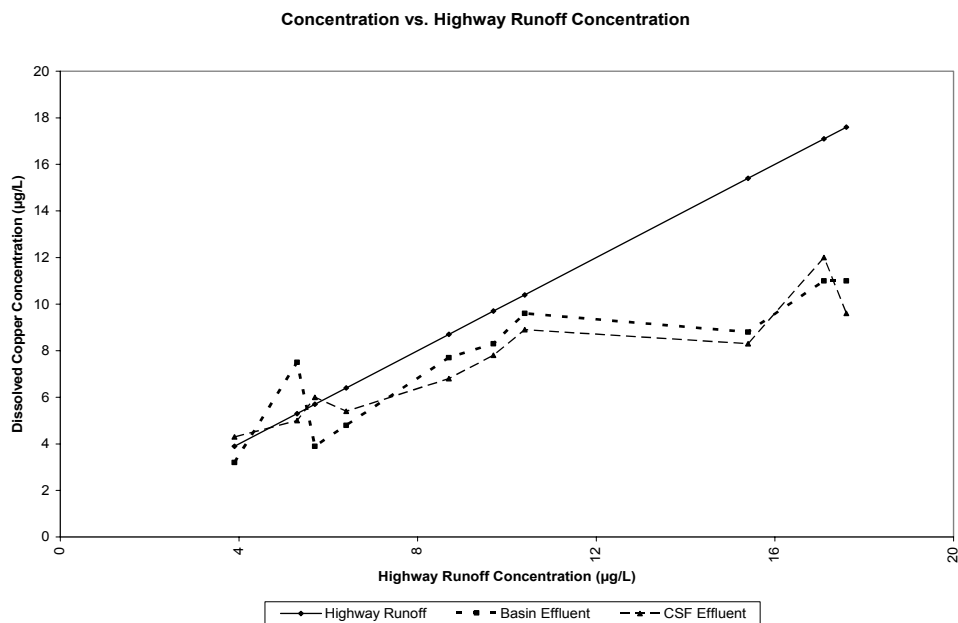
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3.  $\mu\text{g/l}$  = micrograms per liter.
4. (.) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 60-62 below show dissolved copper concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. For systems 604R and 785L, basin effluent concentration appears to be generally lower than basin influent (highway runoff) concentration. This observation is confirmed by t-test for only system 604R.

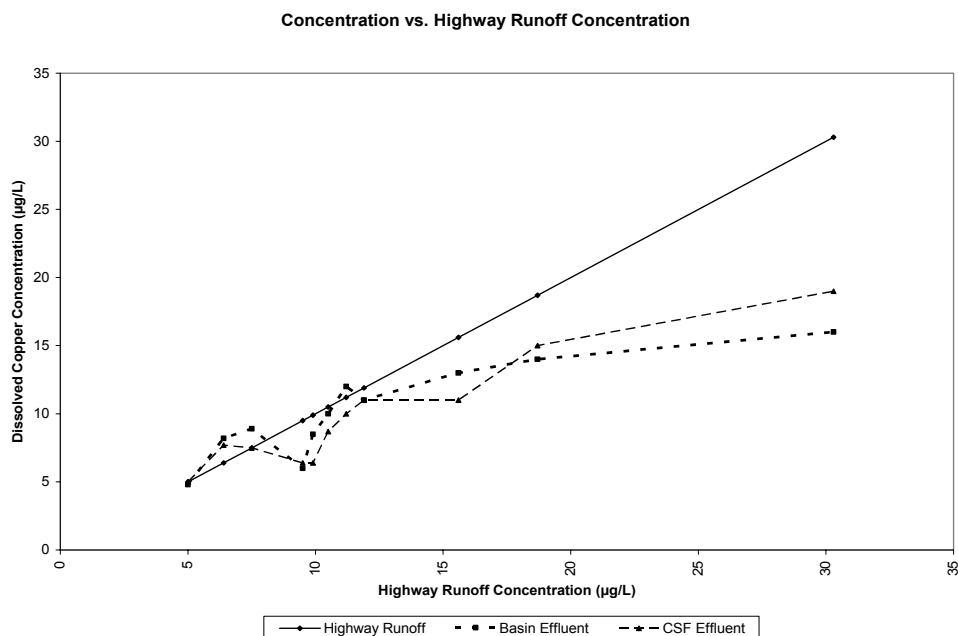
**Figure 60. Dissolved Copper Concentration Compared to Initial (Highway Runoff)  
Concentration – 506R**



**Figure 61. Dissolved Copper Concentration Compared to Initial (Highway Runoff)  
Concentration – 604R**



**Figure 62. Dissolved Copper Concentration Compared to Initial (Highway Runoff)  
Concentration – 785L**



### Total Lead

Total lead concentrations do not appear to consistently decrease or increase through the basins or CSF units at the three monitoring sites over the past two wet seasons (Table 40). None of the six t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent).



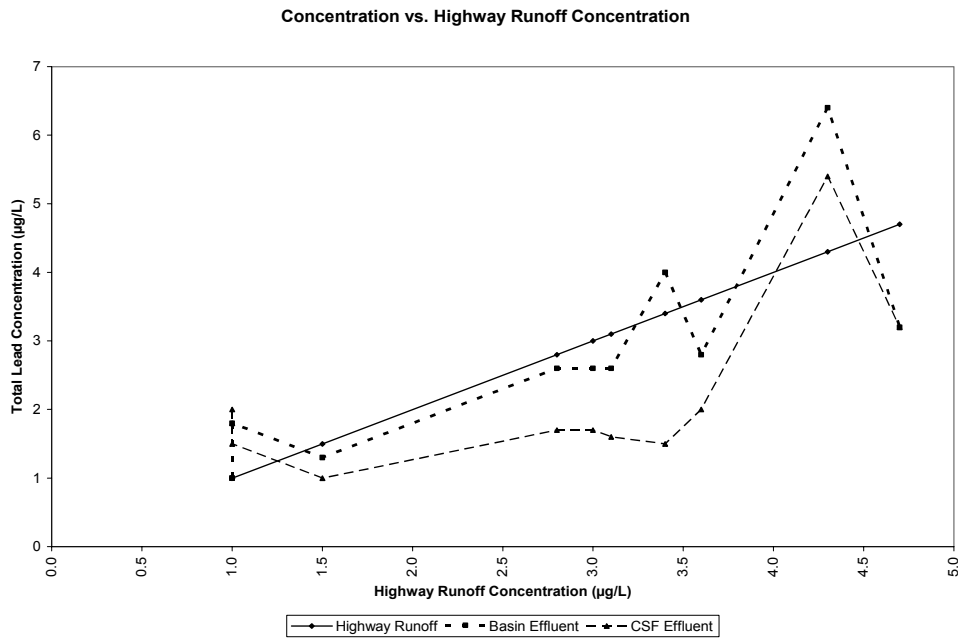
**Table 40. T-Test Results for Total Lead<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (µg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-0.62	0.64
	604R	10	.	-0.32	2.52
	785L	11	.	-0.50	3.08
CSF Filter	506R	11	.	-0.11	1.18
	604R	10	.	-0.54	2.18
	785L	11	.	-0.11	1.82

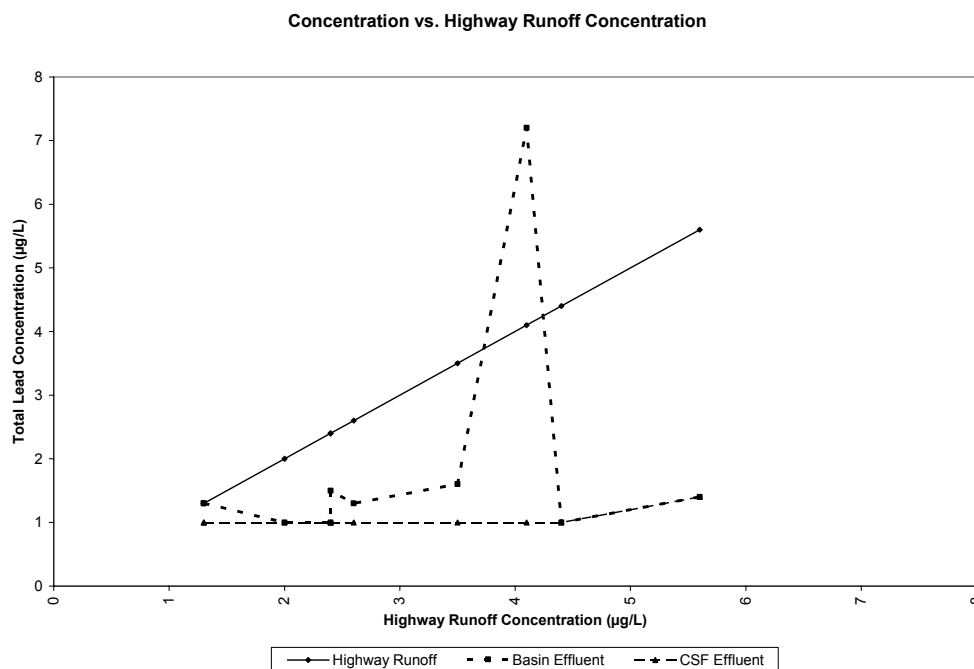
1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. µg/l = micrograms per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.

Figures 63-65 below show total lead concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. No consistent trends are noted.

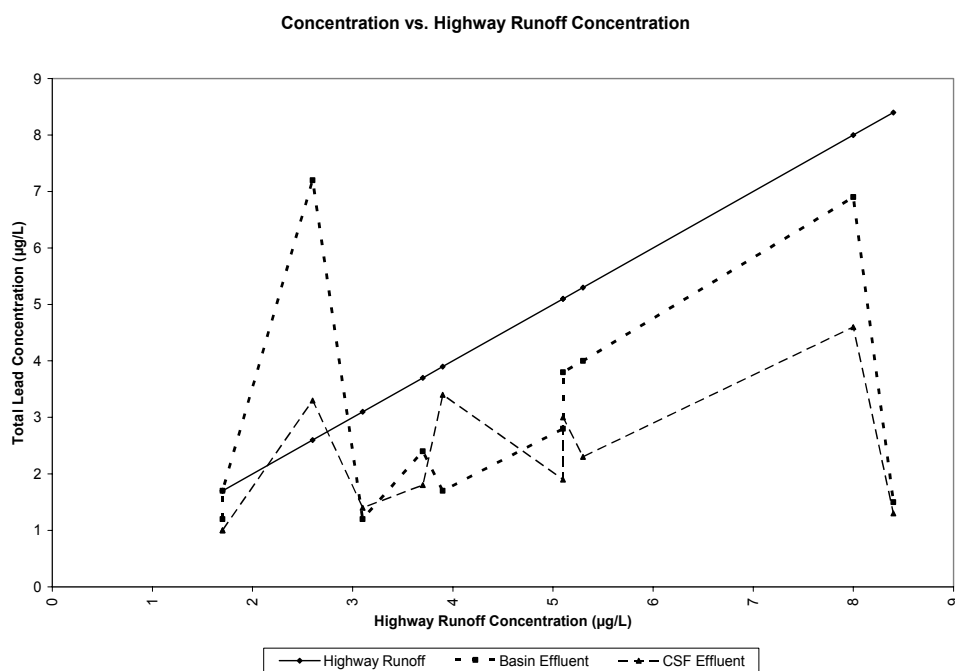
**Figure 63. Total Lead Concentration Compared to Initial (Highway Runoff)  
Concentration – 506R**



**Figure 64. Total Lead Concentration Compared to Initial (Highway Runoff)  
Concentration – 604R**



**Figure 65. Total Lead Concentration Compared to Initial (Highway Runoff) Concentration – 785L**



### Dissolved Lead

Dissolved lead concentrations do not appear to consistently decrease or increase through the basins or CSF units at the three monitoring sites over the past two wet seasons (Table 41). Only one of six t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent). At system 604R, the basin effluent concentration is estimated to be, on average, about 0.09 µg/L less than the influent concentration. For the other system components, influent and effluent concentration was not significantly different.



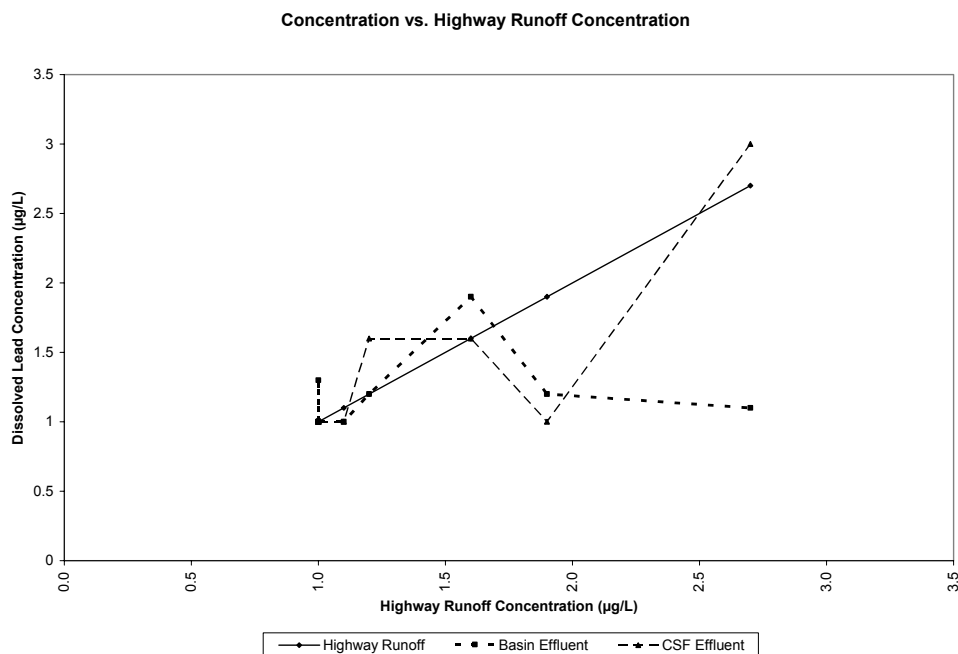
**Table 41. T-Test Results for Dissolved Lead<sup>1</sup>**

CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (µg/l) <sup>3</sup>	
				Lower	Upper
Basin	785L	11	•	-0.20	0.53
CSF Filter	785L	11	•	-0.55	0.28

1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. µg/l = micrograms per liter.
4. (•) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 66 below shows dissolved lead concentration at CSF system 785L monitoring points plotted as a function of initial (highway runoff) concentration. No consistent trends are noted. There were less than five samples with detected values for dissolved lead at CSF system 506R and 604R, and statistical analysis was not performed.

**Figure 66. Dissolved Lead Concentration Compared to Initial (Highway Runoff)**  
**Concentration – 785L**



### Total Zinc

Total zinc concentrations do not appear to consistently decrease or increase through the basin or CSF unit of the 506R system over the past two wet seasons (Table 42). For systems 604R and 785L, the t-tests suggest that, in general, total zinc concentration is reduced in the basins and the filters. At system 604R, the basin effluent concentration is estimated to be, on average, about 35 µg/L less than the influent concentration, and the filter effluent concentration is estimated to be, on average, about 19 µg/L, less than the influent concentration. At system 785L, the basin effluent is estimated to be, on average, about 100 µg/L less than the influent concentration, and the filter effluent is estimated to be, on average, about 53 µg/L greater than the influent concentration.



**Table 42. T-Test Results for Total Zinc<sup>1</sup>**

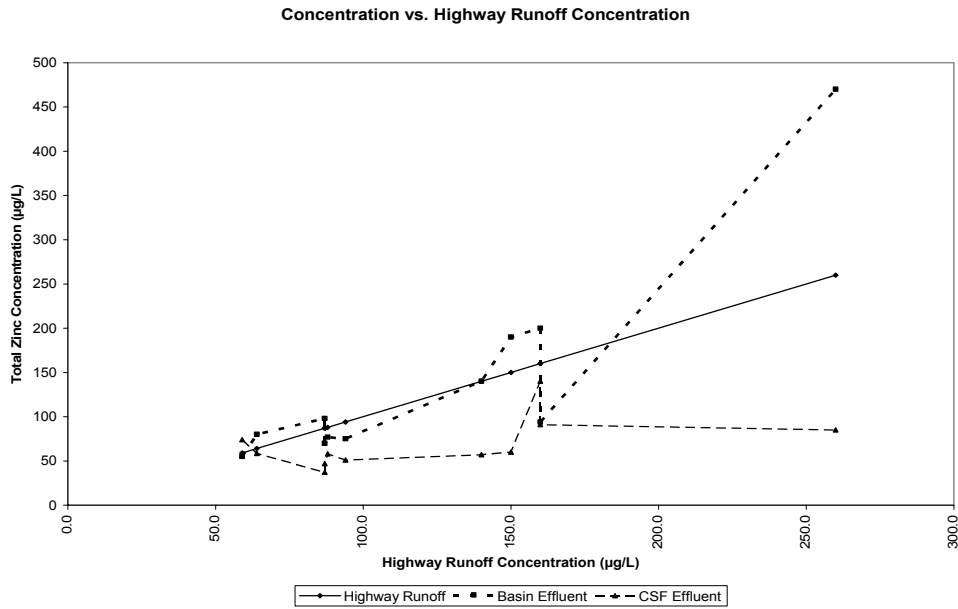
CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (µg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-65.34	28.97
	604R	10	+ <sup>5</sup>	4.61	64.79
	785L	11	+	36.87	169.20
CSF Filter	506R	11	.	-3.26	146.98
	604R	10	+	13.63	25.31
	785L	11	+	21.40	85.14

1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. µg/l = micrograms per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 67-69 below show total zinc concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. For systems 604R and 785L, basin effluent concentration appears to be consistently less than basin influent (highway runoff) concentration, and filter effluent concentration appears to be consistently less than filter influent (basin effluent) concentration. These observations are confirmed by the t-tests.

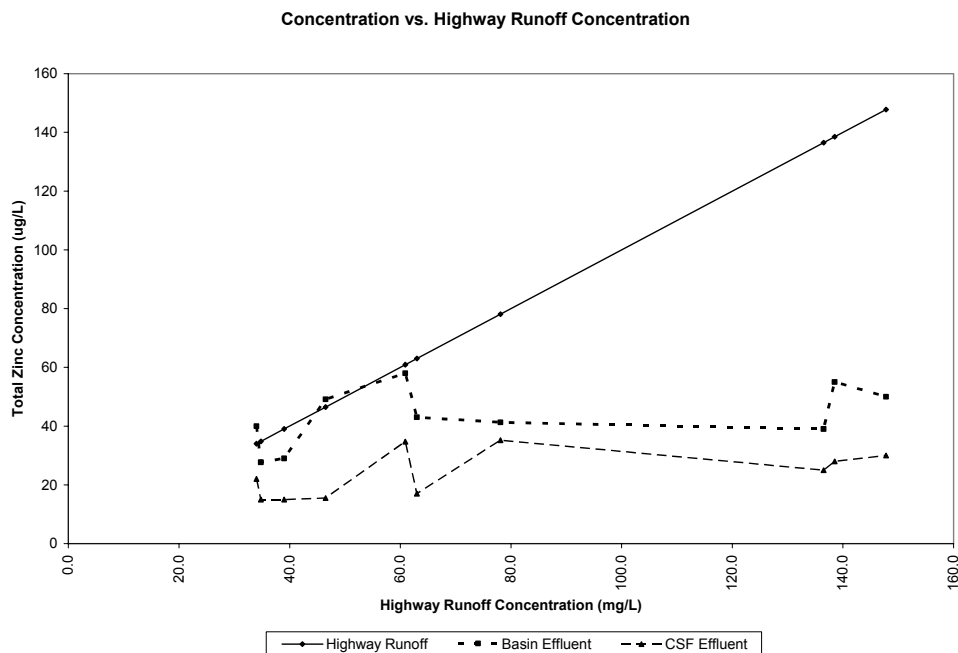
**Figure 67. Total Zinc Concentration Compared to Initial (Highway Runoff)**

**Concentration – 506R**



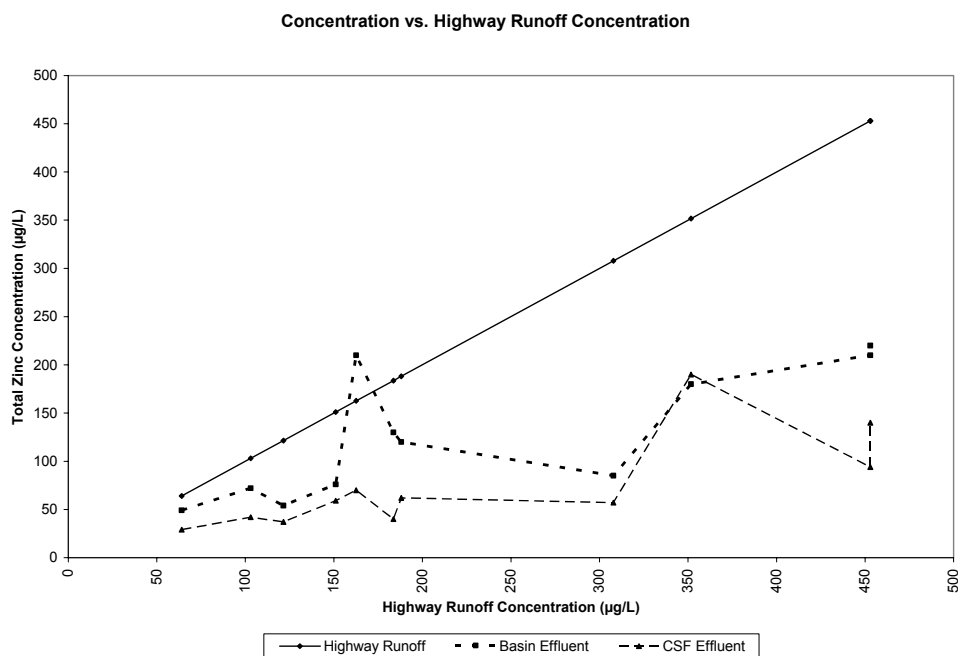
**Figure 68. Total Zinc Concentration Compared to Initial (Highway Runoff)**

**Concentration – 604R**



**Figure 69. 785L- Total Zinc Concentration Compared to Initial (Highway Runoff)**

### Concentration – 785L



### Dissolved Zinc

Dissolved zinc concentrations appear to significantly decrease through some of the basins and filters at the three monitoring sites over the past two wet seasons (Table 43). Three of six t-tests resulted in a rejection of the null hypothesis (there is no difference between influent and effluent). At system 604R, the filter effluent concentration is estimated to be, on average, about 11 µg/L less than the influent concentration. At system 785L, the basin effluent concentration is estimated to be, on average, about 37 µg/L less than the influent concentration, and the filter effluent concentration is estimated to be, on average, about 35 µg/L less than the influent concentration. For the other system components, influent and effluent concentration was not significantly different.



**Table 43. T-Test Results for Dissolved Zinc<sup>1</sup>**

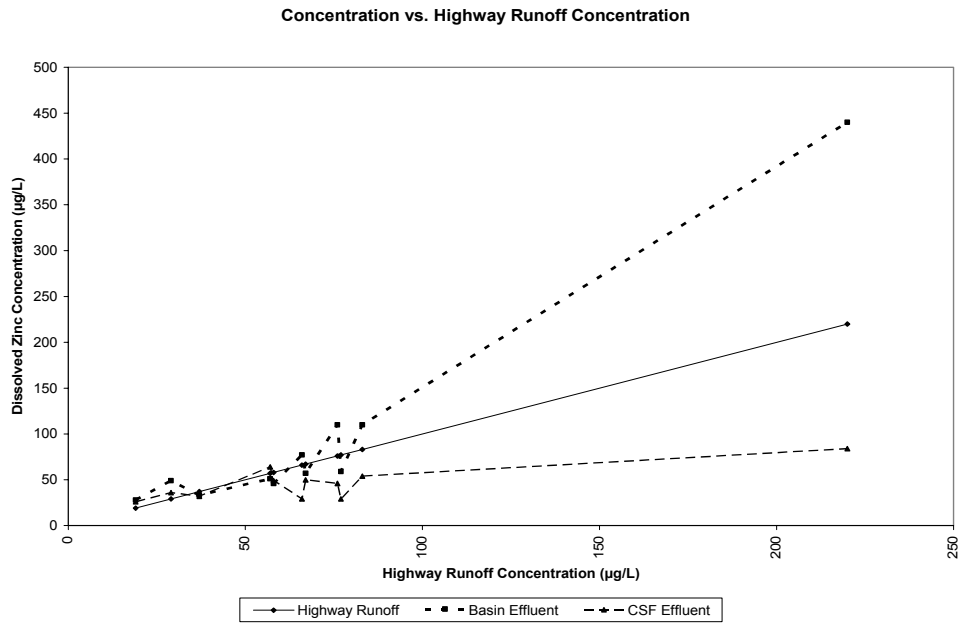
CSF System Component	CSF System	No. of Samples	Result	Confidence Interval for the Mean Difference <sup>2</sup> (µg/l) <sup>3</sup>	
				Lower	Upper
Basin	506R	11	. <sup>4</sup>	-69.66	20.38
	604R	10	.	-9.68	35.38
	785L	11	+ <sup>5</sup>	7.10	66.68
CSF Filter	506R	11	.	-19.17	121.19
	604R	10	+	5.44	15.74
	785L	11	+	20.16	49.48

1. T-test on the sample differences (influent concentration minus effluent concentration). The null hypothesis is that there is no difference between the influent and effluent concentration.
2. With 95% confidence, the true difference (influent concentration minus effluent concentration) is contained in this interval.
3. µg/l = micrograms per liter.
4. (·) The null hypothesis that the system influent concentration is approximately the same as the effluent concentration is not rejected.
5. (+) With 95% confidence, the null hypothesis is rejected. The mean sample difference is positive indicating that the influent concentration tends to be greater than the effluent concentration.

Figures 70-72 below show dissolved zinc concentration at each CSF system monitoring point plotted as a function of initial (highway runoff) concentration. No consistent trends are noted for system 506R. For systems 604R and 785L both dissolved zinc concentration appears to decrease through both the basin and filter, particularly the initial (highway runoff) concentration is relatively high. These observations are consistent with the t-test results.

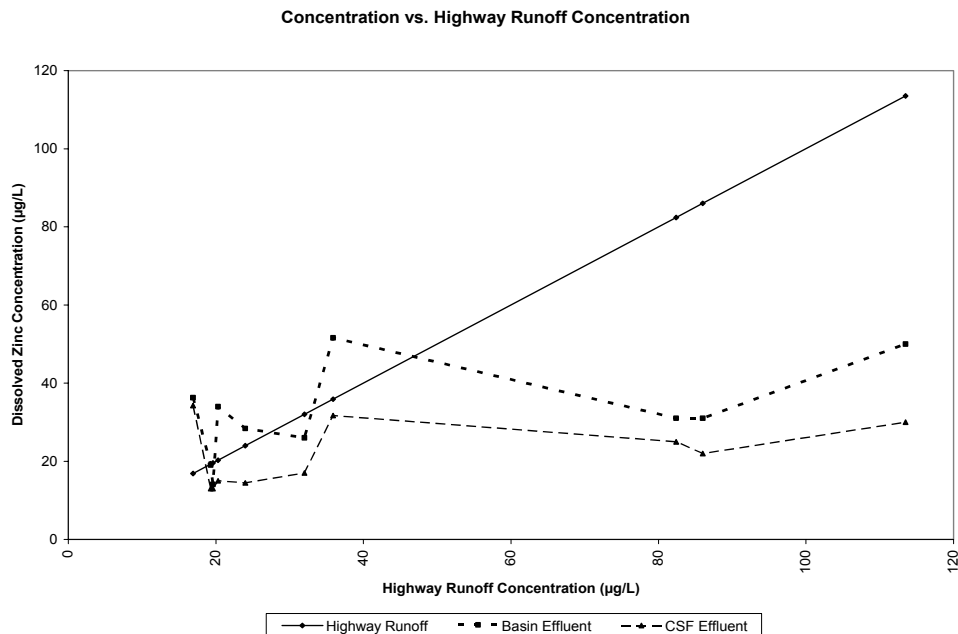
**Figure 70. Dissolved Zinc Concentration Compared to Initial (Highway Runoff)**

**Concentration – 506R**



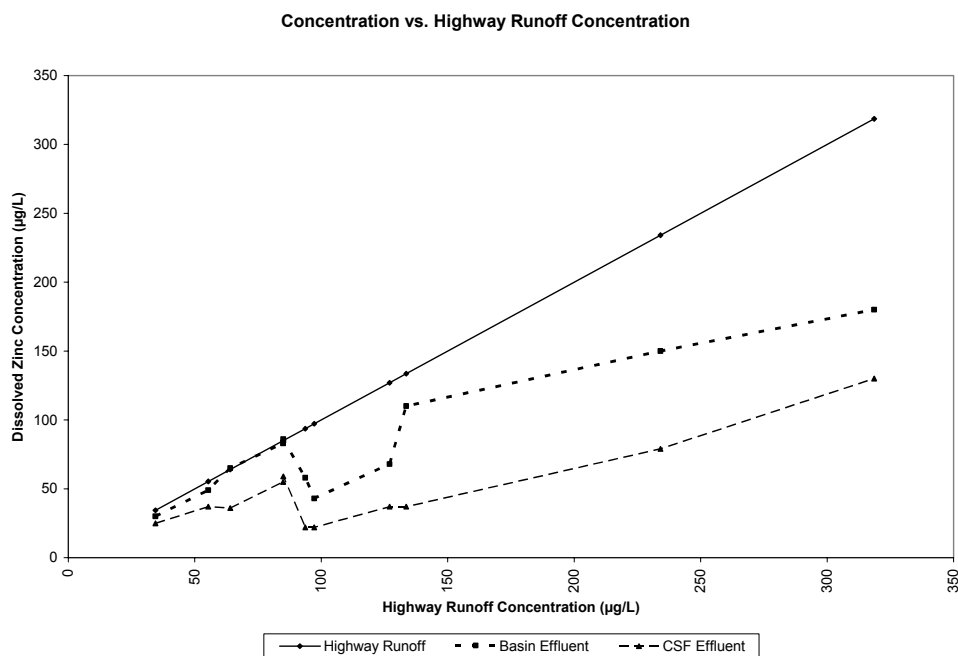
**Figure 71. Dissolved Zinc Concentration Compared to Initial (Highway Runoff)**

**Concentration – 604R**



**Figure 72. Dissolved Zinc Concentration Compared to Initial (Highway Runoff)**

**Concentration – 785L**



### 6.3 CONTRIBUTION OF EXCESS NUTRIENTS FROM THE CSF UNITS

Semi-quantitative measures of periphyton growth (inspection for the presence of noticeably green water [phytoplankton growth], turbidity, and odor) in addition to quantitative nutrient analyses, were included in the study of the CSF systems to evaluate if eutrophication was occurring, resulting in an impairment of beneficial uses of the receiving waters downstream of the systems. As described above, the results of statistical analysis performed indicate nitrate is exported from the CSF units. These results are similar to results of previous studies performed on the horizontal bed CSF systems (References 7.17, 7.18). Both studies indicated export of certain nutrients. The 1998 Caltrans study indicated an increase of dissolved phosphorous and nitrite while the Stormwater Management study indicated export of dissolved phosphorous and nitrate. While the quantitative analytical results indicate export of some nutrients, semi-quantitative observations (i.e., indicators of eutrophication) of the receiving waters downstream



indicate the discharges from the CSF systems did not induce classical signs of eutrophication. This may be primarily due to the short residence time of the CSF discharge during storm events. In summary, there were no visual indications that the nutrients discharged from the CSF systems resulted in eutrophication, and therefore no indications that the discharge impaired the water quality and beneficial uses of the receiving waters associated with SR-73.



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## TABLES

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**Table 2 Storm Event Summary, Highway Site 12-210 – CSF SYSTEM 506R**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hr)	Total Flow (L)	Percent Capture
1	11/12/2001 18:28	11/12/2001 19:57	1.5	6.35	12.19	na	11/12/2001 18:47	11/12/2001 22:04	3.3	39418	96
2	11/24/2001 14:16	11/24/2001 17:44	3.5	23.37	39.62	11.9	11/24/2001 14:38	11/24/2001 20:40	8	150886	96
3	11/29/2001 10:23	11/29/2001 12:37	2.2	5.84	12.19	4.7	11/29/2001 11:04	11/29/2001 17:25	6.4	39913	93
4	12/3/2001 3:34	12/3/2001 5:36	2	5.33	9.14	3.7	12/3/2001 4:04	12/3/2001 8:35	4.5	37246	95
5	12/20/2001 21:36	12/21/2001 14:49	17.2	12.95	36.58	6.3	12/20/2001 21:36	12/21/2001 19:59	20.7	79034	98
6	1/27/2002 17:51	1/28/2002 4:29	10.6	13.97	12.19	28	1/27/2002 18:36	1/28/2002 8:35	14	90164	98
7	3/6/2002 19:29	3/7/2002 12:53	17.4	8.64	6.1	17.4	3/6/2002 20:11	3/7/2002 16:04	19.9	35227	97
8	3/17/2002 19:43	3/17/2002 21:24	1.7	4.83	12.19	9.9	3/17/2002 20:40	3/18/2002 0:17	3.6	20698	95
9	11/08/2002 00:32	11/09/2002 08:48	32.3	35.05	67.06	50	11/8/2002 2:57	11/9/2002 13:09	34.2	4470393	98
10	12/16/2002 14:38	12/16/2002 18:36	4	43.69	27.43	16.6	12/16/2002 14:52	12/17/2002 0:56	10.1	394417	83
11	12/20/2002 01:15	12/20/2002 08:00	6.8	17.78	15.24	2.8	12/20/2002 1:34	12/20/2002 15:06	13.5	233785	78
12	02/24/2003 19:14	02/25/2003 13:45	18.5	68.58	42.67	10.54	2/25/2003 0:32	2/25/2003 14:13	13.7	411273	87
13	03/15/2003 08:00	03/16/2003 05:45	21.8	125.98	106.68	14.9	3/15/2003 8:20	3/16/2003 8:33	24.2	1945929	96
14	04/14/2003 02:40	04/15/2003 02:21	23.7	54.86	24.38	28.9	4/14/2003 4:16	4/15/2003 10:09	29.9	505424	99

"mm" millimeters

"na" First storm event of monitoring season



**Table 3 Storm Event Summary, Highway Site 12-211 – CSF SYSTEM 506R**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent	Start Flow	End Flow	Duration	Total Flow (L)	Percent Capture
						Dry (days)			Flow (hrs)		
1	11/24/2001 14:16	11/24/2001 17:44	3.5	23.37	39.62	11.9	11/24/2001 14:47	11/25/2001 1:58	23.2	198695	97
2	11/29/2001 10:23	11/29/2001 12:37	2.2	5.84	12.19	4.7	11/29/2001 11:12	11/29/2001 20:44	9.5	41769	93
3	12/3/2001 3:34	12/3/2001 5:36	2	5.33	9.14	3.7	12/3/2001 4:11	12/3/2001 13:00	8.8	40736	80
4	12/20/2001 21:36	12/21/2001 14:49	17.2	12.95	36.58	6.3	12/20/2001 23:25	12/21/2001 20:55	21.5	109192	80
5	1/27/2002 17:51	1/28/2002 4:29	10.6	13.97	12.19	28	1/27/2002 19:14	1/28/2002 12:42	17.5	88260	92
6	3/6/2002 19:29	3/7/2002 12:53	17.4	8.64	6.1	17.4	3/6/2002 20:32	3/7/2002 18:55	22.4	83464	91
7	3/17/2002 19:43	3/17/2002 21:24	1.7	4.83	12.19	9.9	3/17/2002 20:50	3/18/2002 11:51	15	63828	90
8	12/16/2002 14:38	12/16/2002 18:36	4	43.69	27.43	16.6	12/16/2002 14:58	12/17/2002 1:36	10.6	320663	91
9	12/20/2002 1:15	12/20/2002 8:00	6.8	17.78	15.24	2.8	12/20/2002 1:39	12/20/2002 14:52	13.2	103255	95
10	2/24/2003 19:14	2/25/2003 13:45	18.5	68.58	42.67	10.54	2/24/2003 19:46	2/25/2003 19:20	23.6	525285	97
11	3/15/2003 8:00	3/16/2003 5:45	21.8	125.98	106.68	14.9	3/15/2003 8:33	3/16/2003 11:57	27.4	2954730	84
12	04/14/2003 02:40	04/15/2003 02:21	23.7	54.86	24.38	28.9	4/14/2003 4:19	4/15/2003 9:32	29.2	346613	98

"mm" millimeter



**Table 4 Storm Event Summary, Highway Site 12-212 – CSF SYSTEM 506R**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/12/2001 18:28	11/12/2001 19:57	1.5	6.35	12.19	na	11/12/2001 18:58	11/13/2001 3:41	8.7	33416	99
2	11/24/2001 14:16	11/24/2001 17:44	3.5	23.37	39.62	11.9	11/24/2001 15:11	11/25/2001 14:19	23.1	202070	95
3	11/29/2001 10:23	11/29/2001 12:37	2.2	5.84	12.19	4.7	11/29/2001 11:23	11/29/2001 20:54	9.5	35338	97
4	12/3/2001 3:34	12/3/2001 5:36	2	5.33	9.14	3.7	12/3/2001 4:32	12/3/2001 13:15	8.7	34663	88
5	12/20/2001 21:36	12/21/2001 14:49	17.2	12.95	36.58	6.3	12/20/2001 23:35	12/21/2001 20:32	21	98130	97
6	1/27/2002 17:51	1/28/2002 4:29	10.6	13.97	12.19	28	1/27/2002 19:55	1/28/2002 12:50	16.9	101497	96
7	3/6/2002 19:29	3/7/2002 12:53	17.4	8.64	6.1	17.4	3/7/2002 0:05	3/7/2002 18:44	18.7	38340	88
8	11/8/2002 0:32	11/9/2002 8:48	32.3	35.05	67.06	50	11/8/2002 3:09	11/9/2002 11:55	32.8	303151	99
9	12/16/2002 14:38	12/16/2002 18:36	4	43.69	27.43	16.6	12/16/2002 15:03	12/16/2002 22:02	7	773706	93
10	12/20/2002 1:15	12/20/2002 8:00	6.8	17.78	15.24	2.8	12/20/2002 2:06	12/20/2002 14:32	12.4	425966	99
11	2/24/2003 19:14	2/25/2003 13:45	18.5	68.58	42.67	10.54	2/24/2003 20:56	2/25/2003 19:04	22.1	1862064	97
12	3/15/2003 8:00	3/16/2003 5:45	21.8	125.98	106.68	14.9	3/15/2003 8:50	3/16/2003 11:46	26.9	2627588	79
13	04/14/2003 02:40	04/15/2003 02:20	23.7	54.61	24.38	28.9	4/14/2003 4:37	4/15/2003 9:47	29.2	489966	99

"mm" millimeter

"na" First storm event of monitoring season.



**Table 5 Storm Event Summary, Highway Site 12-214 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/12/2001 18:29	11/12/2001 20:27	2	6.35	9.14	na	11/12/2001 18:39	11/13/2001 4:02	9.4	63790	93
2	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:20	11/29/2001 20:04	9.7	112678	99
3	12/3/2001 3:22	12/3/2001 5:33	2.2	6.86	9.14	3.7	12/3/2001 3:32	12/3/2001 11:53	8.3	136620	100
4	12/14/2001 11:42	12/14/2001 13:57	2.3	4.32	15.24	11.2	12/14/2001 11:46	12/14/2001 20:59	9.2	57921	97
5	12/20/2001 22:20	12/21/2001 15:25	17.1	18.03	45.72	6.3	12/20/2001 22:20	12/21/2001 20:30	22.2	437439	96
6	12/29/2001 11:28	12/30/2001 18:38	31.2	7.62	6.1	7.8	12/29/2001 11:36	12/31/2001 10:14	31.2	133046	98
7	1/27/2002 17:51	1/28/2002 7:46	13.9	12.95	24.38	28	1/27/2002 19:08	1/28/2002 11:34	16.4	148984	89
8	3/6/2002 19:26	3/7/2002 12:43	17.3	8.89	15.24	17.4	3/6/2002 19:45	3/7/2002 19:46	24	55374	84
9	3/17/2002 19:39	3/17/2002 21:18	1.6	5.84	12.19	9.9	3/17/2002 19:55	3/18/2002 9:39	13.7	77749	97
10	11/8/2002 0:25	11/9/2002 22:01	45.6	57.91	24.38	50	11/8/2002 0:42	11/10/2002 1:33	48.8	959869	100
11	12/16/2002 14:34	12/16/2002 18:33	4	44.7	27.43	16.6	12/16/2002 14:45	12/17/2002 13:40	22.9	749095	100
12	12/20/2002 1:15	12/20/2002 8:12	6.9	17.02	9.14	2.8	12/20/2002 1:29	12/20/2002 9:30	8	313462	100
13	2/24/2003 15:45	2/27/2003 11:02	67.3	91.44	36.58	10.5	2/24/2003 15:57	2/27/2003 14:35	70.6	2111366	99
14	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 8:20	3/16/2003 9:15	24.9	2698381	100
15	04/14/2003 03:02	04/15/2003 07:02	28	53.09	24.38	28.9	4/14/2003 3:51	4/15/2003 5:04	25.2	1085680	85

"mm" millimeter

"na" First storm event of monitoring season.

<sup>1</sup> One-minute data intervals were utilized for basin inlet monitoring systems (12-214, 12-215, 12-216), and (due to the long duration of the sampling period) five-minute data intervals were utilized for the basin outlet/CSF inlet (12-217) and CSF outlet (12-218) monitoring systems. The difference in data logging intervals may cause slight differences in the calculated storm event summary information.



**Table 6 Storm Event Summary, Highway Site 12-215 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/12/2001 18:29	11/12/2001 20:27	2	6.35	9.14	na	11/12/2001 18:32	11/12/2001 20:51	2.3	11883	83
2	11/24/2001 14:15	11/24/2001 17:41	3.4	23.11	54.86	11.7	11/24/2001 14:11	11/24/2001 18:15	4.1	35580	89
3	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:11	11/29/2001 13:53	3.7	11330	98
4	12/3/2001 3:22	12/3/2001 5:33	2.2	6.86	9.14	3.7	12/3/2001 3:22	12/3/2001 8:47	5.4	13262	95
5	12/14/2001 11:42	12/14/2001 13:57	2.3	4.32	15.24	11.2	12/14/2001 11:35	12/14/2001 14:24	2.8	6236	95
6	12/20/2001 22:20	12/21/2001 15:25	17.1	18.03	45.72	6.3	12/20/2001 23:08	12/21/2001 14:45	15.6	24708	96
7	12/29/2001 11:28	12/30/2001 18:38	31.2	7.62	6.1	7.8	12/29/2001 11:33	12/30/2001 19:23	31.8	13587	81
8	1/27/2002 17:50	1/28/2002 7:45	13.9	12.95	24.38	28	1/27/2002 17:50	1/28/2002 5:40	11.8	26446	90
9	3/6/2002 19:26	3/7/2002 12:43	17.3	8.89	15.24	17.4	3/6/2002 19:36	3/7/2002 14:13	18.6	16148	83
10	3/17/2002 19:39	3/17/2002 21:18	1.6	5.84	12.19	9.9	3/17/2002 19:43	3/17/2002 22:49	3.1	11009	92
11	11/8/2002 0:25	11/9/2002 22:09	45.7	57.91	24.38	50	11/8/2002 0:25	11/9/2002 23:07	46.7	99578	99
12	2/24/2003 15:45	2/27/2003 11:02	67.3	91.44	36.58	10.5	2/24/2003 15:45	2/27/2003 11:34	67.7	152379	100
13	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 8:08	3/16/2003 6:02	21.9	150241	98
14	4/14/2003 3:02	4/15/2003 7:02	28	53.09	24.38	28.9	4/14/2003 3:43	4/15/2003 4:43	25	88969	100

"mm" millimeter

"na" First storm event of monitoring season.

<sup>1</sup> One-minute data intervals were utilized for basin inlet monitoring systems (12-214, 12-215, 12-216), and (due to the long duration of the sampling period) five-minute data intervals were utilized for the basin outlet/CSF inlet (12-217) and CSF outlet (12-218) monitoring systems. The difference in data logging intervals may cause slight differences in the calculated storm event summary information.



**Table 7 Storm Event Summary, Highway Site 12-216 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/12/2001 18:29	11/12/2001 20:27	2	6.35	9.14	na	11/12/2001 18:30	11/13/2001 4:26	9.9	11875	96
2	11/24/2001 14:15	11/24/2001 17:41	3.4	23.11	54.86	11.7	11/24/2001 14:19	11/24/2001 18:49	3.4	45989	99
3	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:27	11/29/2001 13:56	3.5	7974	97
4	12/14/2001 11:42	12/14/2001 13:57	2.3	4.32	15.24	11.2	12/14/2001 11:50	12/14/2001 14:31	3	4885	99
5	12/20/2001 22:18	12/21/2001 15:23	17.1	18.03	45.72	6.3	12/20/2001 23:11	12/21/2001 15:18	16.1	26445	80
6	12/29/2001 11:28	12/30/2001 18:38	31.2	7.62	6.1	7.8	12/29/2001 11:28	12/30/2001 19:40	23.1	14235	97
7	1/27/2002 17:51	1/28/2002 7:46	13.9	12.95	24.38	28	1/27/2002 19:04	1/28/2002 1:07	6	14775	93
8	3/6/2002 19:26	3/7/2002 12:43	17.3	8.89	15.24	17.4	3/6/2002 19:33	3/7/2002 19:00	23.4	12078	100
9	3/17/2002 19:39	3/17/2002 21:18	1.6	5.84	12.19	9.9	3/17/2002 19:57	3/18/2002 0:04	4.1	5227	98
10	11/8/2002 0:25	11/9/2002 22:09	45.7	57.91	24.38	50	11/8/2002 0:36	11/10/2002 1:15	48.7	69306	99
11	12/20/2002 1:15	12/20/2002 8:23	7.1	17.02	9.14	2.8	12/20/2002 1:15	12/20/2002 9:03	7.8	11306	86
12	2/24/2003 15:45	2/27/2003 11:02	67.3	91.44	36.58	10.5	2/24/2003 15:46	2/27/2003 11:33	67.8	208122	99
13	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 8:16	3/16/2003 5:59	21.7	65685	89

"mm" millimeter

"na" First storm event of monitoring season.

<sup>1</sup> One-minute data intervals were utilized for basin inlet monitoring systems (12-214, 12-215, 12-216), and (due to the long duration of the sampling period) five-minute data intervals were utilized for the basin outlet/CSF inlet (12-217) and CSF outlet (12-218) monitoring systems. The difference in data logging intervals may cause slight differences in the calculated storm event summary information.



**Table 8 Storm Event Summary, Highway Site 12-217 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/24/2001 14:15	11/24/2001 17:41	3.4	23.11	54.86	11.7	11/24/2001 14:41	11/28/2001 18:44	100	410398	100
2	11/29/2001 10:10	12/3/2001 5:35	91.4	12.95	9.14	4.7	11/28/2001 19:55	12/4/2001 13:08	137.2	603831	89
3	na	na	na	na	na	4.8	12/4/2001 13:07	12/8/2001 8:36	91.5	181737	100
4	12/9/2001 18:35	12/10/2001 9:35	14.9	1.78	3.05	6.1	12/8/2001 8:37	12/12/2001 22:24	109.8	108214	100
5	12/14/2001 11:40	12/14/2001 13:55	2.3	4.32	15.24	11.2	12/12/2001 22:25	12/18/2001 9:22	130.9	177097	100
6	12/20/2001 22:20	12/21/2001 15:25	17.1	18.03	39.62	6.3	12/18/2001 9:23	12/21/2001 18:40	81.3	250124	100
7	12/29/2001 11:25	12/29/2001 20:05	8.7	4.32	3.05	7.8	12/21/2001 18:41	12/30/2001 1:53	199.2	441170	100
8	12/30/2001 16:45	12/30/2001 18:35	1.8	3.3	6.1	0.6	12/30/2001 1:54	1/3/2002 9:40	103.8	250667	94
9	na	na	na	na	na	9.6	1/3/2002 9:41	1/9/2002 9:45	144.1	288006	100
10	na	na	na	na	na	15.5	1/9/2002 9:46	1/14/2002 13:07	123.3	125410	100
11	1/27/2002 17:50	1/28/2002 7:45	13.9	12.95	24.38	28	1/27/2002 19:25	1/31/2002 10:16	86.8	180964	87
12	na	na	na	na	na	8.9	1/31/2002 10:17	2/6/2002 12:08	145.9	126437	95
13	na	na	na	na	na	10.7	2/6/2002 12:08	2/8/2002 6:28	42.3	31498	100
14	3/6/2002 19:25	3/7/2002 23:35	28.2	12.95	15.24	17.4	3/6/2002 23:15	3/11/2002 23:43	120.5	140556	100
15	3/17/2002 19:35	3/17/2002 21:15	1.7	5.84	9.14	9.9	3/17/2002 20:40	3/21/2002 20:10	95.5	80697	100
16	11/8/2002 0:25	11/9/2002 22:06	45.7	57.91	24.38	50	11/8/2002 2:30	11/12/2002 10:24	103.9	921280	99
17	12/16/2002 14:34	12/16/2002 18:33	4	44.7	27.43	16.6	12/16/2002 15:20	12/17/2002 21:00	29.7	120634	75
18	12/20/2002 1:15	12/20/2002 8:12	6.9	17.02	9.14	2.8	12/20/2002 1:56	12/21/2002 12:02	34.1	1085523	100
19	2/24/2003 15:45	2/27/2003 11:02	67.3	91.44	36.58	10.5	2/24/2003 16:16	3/5/2003 9:54	209.6	1216159	98
20	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 8:34	3/19/2003 9:53	97.3	3171088	99
21	4/14/2003 3:02	4/15/2003 7:02	28	53.09	24.38	28.9	4/14/2003 4:22	4/18/2003 10:49	102.5	1060269	93

“na” No associated rain event due to slow draining characteristics of CSF system.

“mm” millimeter

<sup>1</sup> One-minute data intervals were utilized for basin inlet monitoring systems (12-214, 12-215, 12-216), and (due to the long duration of the sampling period) five-minute data intervals were utilized for the basin outlet/CSF inlet (12-217) and CSF outlet (12-218) monitoring systems. The difference in data logging intervals may cause slight differences in the calculated storm event summary information.



**Table 9 Storm Event Summary, Highway Site 12-218 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/24/2001 14:15	11/24/2001 17:45	3.5	23.11	48.77	11.7	11/24/2001 16:20	11/27/2001 12:52	68.5	216058	100
2	11/29/2001 10:10	12/3/2001 5:35	91.4	12.95	9.14	4.7	11/27/2001 12:52	12/4/2001 12:36	167.7	83524	100
3	na	na	na	na	na	4.8	12/4/2001 12:40	12/8/2001 2:09	85.5	33298	100
4	12/9/2001 18:35	12/10/2001 9:35	14.9	1.78	3.05	6.1	12/8/2001 2:10	12/13/2001 7:29	125.3	42934	100
5	12/14/2001 11:40	12/14/2001 13:55	2.3	4.32	15.24	11.2	12/13/2001 7:30	12/18/2001 7:53	120.4	104919	100
6	12/20/2001 22:20	12/21/2001 15:25	17.1	18.03	39.62	6.3	12/18/2001 7:55	12/22/2001 8:24	96.5	367986	96
7	12/29/2001 11:25	12/29/2001 20:05	8.7	4.32	3.05	7.8	12/22/2001 8:25	12/30/2001 1:11	184.8	153792	100
8	12/30/2001 16:45	12/30/2001 18:35	1.8	3.3	6.1	0.6	12/30/2001 1:12	1/3/2002 7:26	102.2	71736	96
9	na	na	na	na	na	9.6	1/3/2002 7:25	1/9/2002 8:39	145.2	86959	100
10	na	na	na	na	na	15.5	1/9/2002 8:40	1/15/2002 6:07	141.5	75952	100
11	1/27/2002 17:50	1/28/2002 7:45	13.9	12.95	24.38	28	1/26/2002 14:00	1/31/2002 7:54	113.9	219810	100
12	na	na	na	na	na	8.9	1/31/2002 7:55	2/6/2002 6:12	142.3	125902	100
13	na	na	na	na	na	10.7	2/6/2002 6:13	2/8/2002 0:30	42.3	25020	100
14	3/6/2002 19:25	3/7/2002 23:35	28.2	12.95	15.24	17.4	3/7/2002 1:35	3/12/2002 3:05	121.5	78087	100
15	3/17/2002 19:35	3/17/2002 21:15	1.7	5.84	9.14	9.9	3/17/2002 21:40	3/22/2002 0:08	98.5	43422	100
16	11/8/2002 0:25	11/9/2002 22:01	45.6	57.91	24.38	50	11/8/2002 3:26	11/12/2002 9:56	102.5	708285	99
17	12/16/2002 14:34	12/16/2002 18:33	4	44.7	27.43	16.6	12/16/2002 15:20	12/18/2002 10:44	43.4	990373	100
18	12/20/2002 1:15	12/20/2002 8:12	6.9	17.02	9.14	2.8	12/20/2002 2:55	12/22/2002 12:53	58	342163	99
19	2/24/2003 15:45	2/27/2003 11:02	67.3	91.44	36.58	10.5	2/25/2003 0:46	3/5/2003 9:26	200.7	1856310	100
20	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 9:31	3/19/2003 10:06	96.6	3298969	100
21	4/14/2003 3:02	4/15/2003 7:02	28	53.09	24.38	28.9	4/14/2003 5:18	4/18/2003 11:14	101.9	893131	100

“na” No associated rain event due to slow draining characteristics of CSF system.

“mm” millimeter

<sup>1</sup> One-minute data intervals were utilized for basin inlet monitoring systems (12-214, 12-215, 12-216), and (due to the long duration of the sampling period) five-minute data intervals were utilized for the basin outlet/CSF inlet (12-217) and CSF outlet (12-218) monitoring systems. The difference in data logging intervals may cause slight differences in the calculated storm event summary information.



**Table 10 Storm Event Summary, Highway Site 12-219 – CSF SYSTEM 604R<sup>1</sup>**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	12/16/02 14:34	12/16/2002 18:33	4	44.7	27.43	16.6	12/16/2002 16:19	12/16/2002 17:35	1.3	37131	71
2	3/15/2003 8:03	3/16/2003 5:22	21.3	107.19	48.77	14.9	3/15/2003 16:01	3/16/2003 2:46	10.8	384336	95

<sup>1</sup>“na” No associated rain event due to slow draining characteristics of CSF system.

“mm” millimeter



**Table 11 Storm Event Summary, Highway Site 12-220 – CSF SYSTEM 785L**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
						Dry (days)					
1	11/12/2001 18:17	11/12/2001 19:26	1.1	7.37	18.29	na	11/12/2001 18:25	11/12/2001 20:09	1.7	20058	93
2	11/24/2001 14:05	11/24/2001 17:50	3.8	22.61	48.77	11.9	11/24/2001 14:00	11/24/2001 19:14	5.2	103793	96
3	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:01	11/29/2001 14:41	4.7	27475	96
4	12/20/2001 21:23	12/21/2001 14:01	16.6	16.76	39.62	6.3	12/20/2001 21:32	12/21/2001 15:27	17.9	68879	99
5	1/27/2002 18:46	1/28/2002 5:23	10.6	17.78	54.86	28	1/27/2002 18:32	1/28/2002 6:30	12	76112	99
6	3/6/2002 19:14	3/7/2002 12:44	17.5	10.92	12.19	17.4	3/6/2002 19:40	3/7/2002 18:50	23.2	28543	100
7	3/17/2002 19:11	3/17/2002 21:25	2.2	7.11	21.34	9.9	3/17/2002 19:20	3/17/2002 22:03	2.7	23656	100
8	11/8/2002 0:28	11/9/2002 8:32	32.1	67.06	39.62	50	11/8/2002 5:48	11/9/2002 10:54	29.1	217102	78
9	12/16/2002 14:34	12/16/2002 18:35	4	39.62	30.48	16.6	12/16/2002 14:34	12/16/2002 19:14	4.6	239518	98
10	12/20/2002 1:09	12/20/2002 8:23	7.2	24.13	15.24	2.8	12/20/2002 1:15	12/20/2002 8:39	7.4	73006	97
11	2/24/2003 18:28	2/25/2003 15:30	21	56.9	18.29	10.5	2/24/2003 18:41	2/25/2003 17:04	22.4	348061	100
12	3/15/2003 7:57	3/16/2003 5:55	22	119.63	64.01	14.9	3/15/2003 7:58	3/16/2003 7:22	23.4	677480	100
13	4/14/2003 2:19	4/15/2003 4:38	26.3	52.58	27.43	28.9	4/14/2003 2:26	4/15/2003 9:48	31.4	267218	100

"mm" millimeter

"na" First storm event of monitoring season.



**Table 12 Storm Event Summary, Highway Site 12-221 – CSF SYSTEM 785L**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent	Start Flow	End Flow	Duration	Total Flow (L)	Percent Capture
						Dry (days)			Flow (hrs)		
1	11/24/2001 14:05	11/24/2001 17:50	3.8	22.61	48.77	11.9	11/24/2001 14:22	11/24/2001 18:22	3.2	38021	89
2	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:03	11/29/2001 13:29	3.4	5093	99
3	12/20/2001 21:23	12/21/2001 14:01	16.6	16.76	39.62	6.3	12/20/2001 23:11	12/21/2001 14:47	15.6	14995	94
4	1/27/2002 18:46	1/28/2002 5:23	10.6	17.78	54.86	28	1/28/2002 19:54	1/28/2002 4:41	8.8	18985	97
5	3/6/2002 19:14	3/7/2002 12:44	17.5	10.92	12.19	17.4	3/6/2002 19:27	3/7/2002 13:14	17.8	10627	81
6	3/17/2002 19:11	3/17/2002 21:25	2.2	7.11	21.34	9.9	3/17/2002 19:25	3/17/2002 23:46	4.3	7884	93
7	11/8/2002 0:28	11/9/2002 8:32	32.1	67.06	39.62	50	11/8/2002 0:28	11/9/2002 9:18	32.8	87021	98
8	12/16/2002 14:34	12/16/2002 18:35	4	39.62	30.48	16.6	12/16/2002 14:36	12/16/2002 18:51	4.3	54399	96
9	12/20/2002 1:09	12/20/2002 8:23	7.2	24.13	15.24	2.8	12/20/2002 1:22	12/20/2002 8:30	7.1	20368	94
10	2/24/2003 18:28	2/25/2003 15:30	21	56.9	18.29	10.51	2/24/2003 19:00	2/25/2003 14:55	19.9	76619	88
11	3/15/2003 7:57	3/16/2003 5:55	22	119.63	64.01	14.9	3/15/2003 8:08	3/16/2003 6:52	22.7	175470	89
12	4/14/2003 2:19	4/15/2003 4:38	26.3	52.58	27.43	28.9	4/14/2003 2:27	4/15/2003 7:23	28.9	80631	87

"mm" millimeter



**Table 13 Storm Event Summary, Highway Site 12-222 – CSF SYSTEM 785L**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent Dry (days)	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
1	11/12/2001 18:17	11/12/2001 19:26	1.1	7.37	18.29	na	11/12/2001 18:29	11/12/2001 23:40	5.2	13030	88
2	11/24/2001 14:05	11/24/2001 17:50	3.8	22.61	48.77	11.9	11/24/2001 14:26	11/24/2001 23:35	9.1	97764	97
3	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 10:27	11/29/2001 18:30	8.1	17938	91
4	12/3/2001 2:35	12/3/2001 5:10	2.6	6.6	15.24	3.6	12/3/2001 2:51	12/3/2001 11:20	8.5	18254	90
5	12/20/2001 21:23	12/20/2001 14:01	16.6	16.76	39.62	6.3	12/20/2001 23:14	12/21/2001 20:10	20.9	70039	98
6	1/27/2002 18:46	1/28/2002 5:23	10.6	17.78	54.86	28	1/27/2002 21:29	1/28/2002 7:14	9.8	68593	99
7	3/6/2002 19:14	3/7/2002 12:44	17.5	10.92	12.19	17.4	3/6/2002 22:45	3/7/2002 15:38	16.9	21575	94
8	11/8/2002 0:28	11/9/2002 8:32	32.1	67.06	39.62	50	11/8/2002 2:20	11/9/2002 10:32	32.2	331768	100
9	12/16/2002 14:34	12/16/2002 18:35	4	39.62	30.48	16.6	12/16/2002 14:43	12/17/2002 0:33	9.8	289517	99
10	12/20/2002 1:09	12/20/2002 8:23	7.2	24.13	15.24	2.8	12/20/2002 1:31	12/20/2002 13:23	11.9	137021	99
11	2/24/2003 18:28	2/25/2003 15:30	21	56.9	18.29	10.51	2/24/2003 19:44	2/25/2003 19:53	24.1	247150	98
12	3/15/2003 7:57	3/16/2003 5:55	22	119.63	64.01	14.9	3/15/2003 8:18	3/16/2003 0:29	28.2	1013799	99
13	4/14/2003 2:19	4/15/2003 4:38	26.3	52.58	27.43	28.9	4/14/2003 2:38	4/15/2003 9:43	29.1	223901	99

"mm" - millimeter

"na" First storm event of monitoring season.



**Table 14 Storm Event Summary, Highway Site 12-223 – CSF SYSTEM 785L**

Number	Start Rain	End Rain	Duration Rain (hrs)	Total Rain (mm)	Max Intensity (mm/hour)	Antecedent	Start Flow	End Flow	Duration Flow (hrs)	Total Flow (L)	Percent Capture
						Dry (days)					
1	11/12/2001 18:17	11/12/2001 19:26	1.1	7.37	18.29	na	11/12/2001 18:45	11/13/2001 2:01	7.3	33707	93
2	11/24/2001 14:05	11/24/2001 17:50	3.8	22.61	48.77	11.9	11/24/2001 14:54	11/25/2001 0:35	9.7	179895	98
3	11/29/2001 10:09	11/29/2001 12:44	2.6	6.1	9.14	4.7	11/29/2001 11:11	11/29/2001 18:26	7.3	24751	99
4	12/3/2001 2:35	12/3/2001 5:10	2.6	6.6	15.24	3.6	12/3/2001 3:24	12/3/2001 11:43	8.3	40107	97
5	12/20/2001 21:23	12/21/2001 14:01	16.6	16.76	39.62	6.3	12/20/2001 23:26	12/21/2001 16:08	16.7	106054	99
6	1/27/2002 18:46	1/28/2002 5:23	10.6	17.78	54.86	28	1/27/2002 21:37	1/28/2002 7:17	9.7	78965	100
7	3/6/2002 19:14	3/7/2002 12:44	17.5	10.92	12.19	17.4	3/6/2002 23:04	3/7/2002 17:58	18.9	28766	99
8	3/17/2002 19:11	3/17/2002 21:25	2.2	7.11	21.34	9.9	3/17/2002 20:32	3/18/2002 6:14	9.7	33513	92
9	11/8/2002 0:28	11/9/2002 8:32	32.1	67.06	39.62	50	11/8/2002 2:29	11/9/2002 10:27	30.5	411177	98
10	12/16/2002 14:34	12/16/2002 18:35	4	39.62	30.48	16.6	12/16/2002 14:54	12/17/2002 6:47	15.9	384118	95
11	12/20/2002 1:09	12/20/2002 8:23	7.2	24.13	15.24	2.8	12/20/2002 1:55	12/20/2002 15:07	13.2	158446	98
12	2/24/2003 18:28	2/25/2003 15:30	21	56.9	18.29	10.51	2/24/2003 19:39	2/25/2003 19:26	23.8	520488	99
13	3/15/2003 7:57	3/16/2003 5:55	22	119.63	64.01	14.9	3/15/2003 8:35	3/16/2003 12:06	27.5	804750	100
14	4/14/2003 2:19	4/15/2003 4:38	26.3	52.58	27.43	28.9	4/14/2003 2:50	4/15/2003 9:36	30.8	236271	100

"mm" millimeter

"na" First storm event of monitoring season.



**Table 15 Percent of Storm Water Flow Over Inlet Bay Weir**

CSF Site	Storm Runoff Date(s)	Total Flow (l)	Peak Flow (l/s)	Rainfall Total (mm)	Rain Duration (hrs)	% Flow Over Weir	% Flow Through Inlet Drains
506R	11/24/2001 to 11/25/2001	198695	48.79	23.37	3.5	67%	33%
	11/29/2001	41769	4.47	5.84	2.2	21%	79%
	12/03/2001	38636	5.52	5.33	2	20%	80%
	12/20/2001 to 12/21/2001	106362	39.03	12.95	17.2	22%	78%
	1/27/2002 to 1/28/2002	88260	16.05	13.97	10.6	24%	76%
	3/6/2002 to 3/7/2002	83464	1.13	8.64	17.4	0%	100%
	3/17/2002 to 3/18/2002	63828	1.13	4.83	1.7	0%	100%
	12/16/2002 to 12/17/2002	320663	74.88	43.69	4	81%	19%
	12/20/2002	103255	34.3	17.78	6.8	16%	74%
	2/24/2003 to 2/25/2003	525285	53.91	68.58	18.5	73%	27%
604R	3/15/2003 to 3/16/2003	2954730	86.88	125.98	21.8	92%	8%
	4/14/2003 to 4/15/2003	346613	37.36	54.86	23.7	14%	86%
	11/28/2001 to 1/14/2002	2426256	26.12	44.7	136.7	6%	94%
	01/28/2002 to 2/8/2002	362156	0.71	12.19	7.2	0%	100%
	03/06/2002 to 3/11/2002	140556	0.62	12.95	28.2	0%	100%
	03/18/2002 to 3/21/2002	80697	0.4	5.84	1.7	0%	100%
	11/8/2002 to 11/12/2002	921280	26.26	57.91	45.7	87%	13%
	12/16/2002 to 12/17/2002	120634	15.68	44.7	4	66%	34%
	12/20/2002 to 12/21/2002	1085523	87.05	17.02	6.9	96%	4%
	2/24/2003 to 3/5/2003	1216159	45.05	91.44	67.3	75%	25%
785L	3/15/2003 to 3/19/2003	3171088	258.1	107.19	21.3	96%	4%
	4/14/2003 to 4/18/2003	1060269	47.46	53.09	28	91%	9%
	11/12/01	13030	3.57	7.37	1.1	56%	43%
	11/24/2001	97764	17.57	22.61	3.8	92%	8%
	11/29/2001	17938	2.8	6.1	2.6	53%	47%
	12/03/2001	18254	2.29	6.6	2.6	49%	51%
	12/20/2001 to 12/21/2001	70039	12.65	16.76	16.6	55%	45%
	1/27/2002 to 1/28/2002	68593	17.57	17.78	10.6	85%	15%
	3/6/2002 to 3/7/2002	21575	0.79	10.92	17.5	27%	73%
	11/8/2002 to 11/9/2002	87021	19.16	67.06	32.1	68%	32%
	12/16/2002	54399	12	39.62	4	94%	6%
	12/20/2002	20368	4.84	24.13	7.2	76%	24%
	2/24/2003 to 2/25/2003	76619	8.49	56.9	21	83%	17%
	3/15/2003 to 3/16/2003	175470	21.79	119.63	22	95%	5%
	4/14/2003 to 4/15/2003	80631	12.37	52.58	26.3	58%	42%



Table 16 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 506R, Site 12-210 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1 11/12/01	Event 2 11/24/01	Event 3 11/29/01	Event 4 12/3/01	Event 5 12/20/01 to 12/21/01	Event 6 1/27/02 to 1/28/02	Event 7 3/06/02 to 3/07/02	Event 8 3/17/02 to 3/18/02	Event 9 11/8/02 to 11/9/02	Event 10 12/16/02 to 12/17/02	Event 11 12/20/02	Event 12 2/25/03	Event 13 3/15/03 to 3/16/03	Event 14 4/14/03 to 4/15/03	n	Range		Mean	Median <sup>2</sup>	Standard Deviation	CV	
																		Min <sup>1</sup>	Max					
Conventionals																								
Dissolved Organic Carbon	mg/L	1.0	48.5	27.4	42.3	27.1	25.6	21	71	45	51.5	31.6	12.4	12.9	11.1	16.8	14	11.1	71.0	31.7	27.3	18.1	0.570	
Conductivity	µmhos/cm	1.0	357	266	315	188	231	127	219	106	244	212	62	307	320.5	246	14	62	357	229	238	87	0.381	
Total Hardness	mg/L	2	140	90	170	74	110	4	72	34	104	118	106	266	142	96	14	4	266	109.0	105.0	65.2	0.598	
pH	pH units	0.1	7.2	6.8	7.4	6.9	6.8	6.9	6.7	6.5	7.2	7	6.8	6.7	6.2	6.9	14	6.2	7.4	6.86	6.85	0.309	0.045	
Total Dissolved Solids	mg/L	1	362	94	212	100	116	122	236	160	212	210	16	270	212	196	14	16	362	180	203	88.7	0.493	
Total Organic Carbon	mg/L	1.0	49.4	27.6	45.7	28.7	28.3	22.4	78.5	50.4	58	34.9	13.8	15.3	13	19.8	14	13	78.5	34.7	28.5	19.8	0.569	
Total Suspended Solids	mg/L	1	409	389	231	28	92	101	45	49	71	300	52	179	196	14	14	14	409	154	96.5	136	0.882	
SVOCs																								
Benzo(ghi)Perylene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.06	0.05U	0.05U	0.05U	0.05U	0.05U	14	0.06	0.06	NA	NA	NA	NA	
Fluoranthene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.08	0.05	0.05U	0.05U	0.07	0.05U	14	0.05	0.08	0.03	0.026	0.026	0.820	
Phenanthrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.14	0.05	0.05U	0.05U	0.05U	0.05U	14	0.05	0.14	NA	NA	NA	NA	
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.09	0.08	0.05U	0.05U	0.05U	0.05U	14	0.08	0.09	NA	NA	NA	NA	
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	14	NA	NA	NA	NA	NA	NA	
Hydrocarbons																								
Oil & Grease	mg/L	5.0	5U	5U	6	8	5U	6	6	5U	5U	5U	5	5U	5U	5U	14	5	8	4.47	4.22	1.78	0.40	
Total Metals																								
Arsenic	µg/L	1.0	4.6	4.0	3.4	1.6	1.9	2.4	2.2	1.6	1.9	4.2	1.3	3.2	4.7	1.1	14	1.1	4.7	2.72	2.3	1.28	0.469	
Cadmium	µg/L	0.2	1.3	3.5	2.4	1.2	2.5	1.6	0.8	0.8	1.3	2.1	1.2	2.0	3.0	1.4	14	0.8	3.5	1.79	1.5	0.83	0.47	
Chromium	µg/L	1.0	21.0	16.0	8.9	2.8	7.8	8.3	5.4	5.0	5.8	11.0	2.4	11.0	9.3	3.9	14	2.4	21	8.47	8.05	5.35	0.632	
Copper	µg/L	1.0	32.0	23.0	21.0	9.8	12.0	19.0	36.0	23.0	38.0	20.0	7.1	14.0	11.0	9.3	14	7.1	38	19.7	19.5	10.2	0.517	
Nickel	µg/L	2.0	20.0	24.0	20.0	10.0	19.0	14.0	20.0	12.0	21.0	17.0	8.9	16.0	15.0	11.0	14	8.9	24	16.3	16.5	4.67	0.287	
Lead	µg/L	1.0	6.0	4.3	3.4	1.0	1.5	2.8	3.0	3.9	3.7	4.7	1.0	3.6	3.1	1.0U	14	1.0	6.0	3.06	3.25	1.58	0.517	
Zinc	µg/L	5.0	310	160	140	94	87	150	260	230	340	160	64	88	87	59	14	59	340	159	145	93	0.587	
Dissolved Metals																								
Arsenic	µg/L	1.0	1.7	1.2	2.0	1.3	1.0	1.0U	1.8	1.0U	1.5	4.2	1.0U	1.1	1.0	1.1	14	1.0	4.2	1.40	1.15	1.051	0.751	
Cadmium	µg/L	0.2	0.3	1.5	1.4	0.9	2.0	0.8	0.5	0.4	1.0	0.8	0.6	0.7	0.8	1.2	14	0.3	2.0	0.92	0.8	0.481	0.522	
Chromium	µg/L	1.0	2.7	2.5	3.3	1.8	1.8	1.0	3.1	1.5	4.1	2.5	1.4	3.0	1.6	3.1	14	1.0	4.1	2.39	2.5	0.90	0.378	
Copper	µg/L	1.0	11.0	8.8	13.0	7.7	8.0	8.8	28.0	15.0	29.0	9.4	4.2	6.5	3.2	8.3	14	3.2	29	11.5	8.8	8.13	0.707	
Nickel	µg/L	2.0	9.3	15.0	15.0	8.8	16.0	8.9	16.0	8.6	18.0	11.0	6.6	9.7	6.4	9.9	14	6.4	18	11.4	9.8	3.86	0.339	
Lead	µg/L	1.0	1.0U	1.0U	1.0	1.0U	1.0U	1.0U	1.6	1.0U	1.0U	1.0U	1.0U	1.5	1.0U	1.0U	14	1.0	1.6	0.66	0.54	0.628	0.956	
Zinc	µg/L	5.0	130	67	76	77	66	83	220	140	290	58	29	37	19	57	14	19	290	96	71.5	79.8	0.829	
Nutrients																								
Ammonia	mg/L	0.10	0.18	0.56	0.88	0.66	1.18	0.85	1.50	0.10U	1.04	0.31	0.10	0.25	0.37	1.00	14	0.10	1.50	0.64	0.61	0.454	0.710	
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10	0.10U	0.18	0.11	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	14	0.10	0.18	0.07	0.05	0.057	0.88	
Nitrate as N	mg/L	0.10	1.15	0.95	1.42	1.23	1.32	0.85	1.75	0.17	1.67	0.78	0.38	0.25	0.21	0.45	14	0.17	1.75	0.90	0.9	0.549	0.611	
Ortho-P	mg/L	0.03	0.03U	0.15	0.03U	0.03U	0.03U	0.03	0.03U	0.04	0.03U	0.03	0.03U	0.34	0.11	0.06	14	0.03	0.34	0.06	-0.03	0.104	1.82	
Phosphorus (Dissolved)	mg/L	0.03	0.04	0.31	0.03U	0.05	0.04	0.29	0.03U	0.03U	0.21	0.12	0.30	0.30	0.29	0.03U	14	0.04	0.31	0.12	0.045	0.127	1.02	
Phosphorus (Total)	mg/L	0.03	0.31	0.64	0.50	0.22	0.22	0.39	0.12	0.18	0.05	0.50	0.19	0.47	0.43	0.03U	14	0.05	0.64	0.31	0.27	0.189	0.619	
TKN	mg/L	0.10	3.69	2.99	3.31	2.14	4.59	1.75	4.38	1.78	4.05	1.78	1.03	1.48	1.41	1.50	14	1.03	4.59	2.56	1.96	1.24	0.484	
Total Nitrogen <sup>4</sup>	mg/L	0.10	4.94	4.04	4.83	3.47	6.02	2.70	6.31	2.06	5.82	2.66	1.51	1.83	1.72	2.05	14	1.51	6.31	3.57	3.09	1.75	0.489	
Microbiological																								
Fecal Coliform	MPN/100 mL	2	17000	1100	5000	5000	800	400	900	130	1100	800	70	2600	5000	240	14	70	17000	2867	1000	5167	1.80	
Total Coliform	MPN/100 mL	2	50000	3300	24000	24000	30000	5000	2300	8000	1700	5000	1600	160000	22000	2300	14	1600	160000	24229	6500	49845	2.06	

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"n" Number of samples used in the statistics calculations.

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit.

<sup>3</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluorene, Indeno(1,2,3-c,d)Pyrene, and Naphthalene.

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"NC" Not Collected

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 17 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 506R, Site 12-211 (Basin Outlet/CSF Inlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	n	Range		Mean	Median	Standard Deviation	CV
			11/24/01 to 11/25/01	Event 2 11/29/01	12/3/01	12/20/01 to 12/21/01	1/27/02 to 1/28/02	3/06/02 to 3/07/02	3/17/02 to 3/18/02	12/16/02 to 12/17/02		2/24/03 to 2/25/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max				
Conventionals																					
Dissolved Organic Carbon	mg/L	1.0	26.4	32	22.3	28.8J	33.2	146	37.6	31.2	13.7	8.6	9.4	20.2	12	8.6	146	34.1	27.6	45.7	1.339
Conductivity	µmhos/cm	1.0	376	209	194	314	218	338	143	358	71	324	353.1	352	12	71	376	271	319	101.9	0.376
Total Hardness	mg/L	2	130	130	92	160	8	210	38	132	124	94	24	128	12	8	210	106	126	59.7	0.564
pH	pH units	0.1	7.2	7.1	7	6.4	6.7	6.8	6.3	7.3	7	6.5	6.4	7.1	12	6.3	7.3	6.82	6.9	0.351	0.052
Total Dissolved Solids	mg/L	1	124	60	150	264	56	636	196	172	206	196	288	236	12	56	636	215	196	169	0.786
Total Organic Carbon	mg/L	1.0	29.5	36.3	23.7	29.1	34.6	150	39.8	31.5	15.5	12U	11.4U	23.8	12	11.4	150	36.4	29.3	46.5	1.275
Total Suspended Solids	mg/L	1	419	69	20	36	21	45	24	243	101	170	214	26	12	20	419	115.7	57.0	131	1.130
SVOCs																					
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.07	0.05U	0.05U	0.05U	0.05U	12	0.07	0.07	NA	NA	NA	NA
Additional PAHs <sup>2</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	12	NA	NA	NA	NA	NA	NA
Hydrocarbons																					
Oil & Grease	mg/L	5.0	5U	5U	NC	5U	5U	5	5U	5U	5U	5U	5U	5U	11	5	5	NA	NA	NA	NA
Total Metals																					
Arsenic	µg/L	1.0	6.6	1.7	1.5	1.8	2.7	2.9	1.3	3.3	2	3.3	4.2	1.2	12	1.2	6.6	2.71	2.35	1.64	0.607
Cadmium	µg/L	0.2	7.7	1.8	1.9	5.4	2.5	1.4	0.9	2.9	2.8	2.1	4.7	2.9	12	0.9	7.7	3.08	2.65	2.03	0.660
Chromium	µg/L	1.0	23	3.8	2.8	4.1	10	7.1	2.6	8.8	4.8	11	8.9	4.2	12	2.6	23	7.59	5.95	6.24	0.822
Copper	µg/L	1.0	31	16	8.4	13	23	55	14	15	10	13	10	9.6	12	8.4	55	18.2	13.5	14.8	0.815
Nickel	µg/L	2.0	47	12	13	31	22	39	10	19	16	15	20	19	12	10	47	21.9	19	11.8	0.538
Lead	µg/L	1.0	6.4	4	1.0U	1.3	2.6	2.6	1.4	3.2	1.8	2.8	2.6	1.0U	12	1.3	6.4	2.53	2.6	1.67	0.658
Zinc	µg/L	5.0	200	140	75	98	190	470	130	94	80	77	70	55	12	55	470	140	96	132	0.942
Dissolved Metals																					
Arsenic	µg/L	1.0	1.2	1.5	1.3	1.2	1	2.6	1.0U	2.4	1.3	1.4	1.1	1.1	12	1.0	2.6	1.40	1.25	0.583	0.417
Cadmium	µg/L	0.2	3.2	1.4	1.5	4.4	1.6	1.3	0.6	1.4	1.7	0.8	2	2.5	12	0.6	4.4	1.87	1.55	1.114	0.597
Chromium	µg/L	1.0	1.3	3	1.4	2.1	1.3	4.9	1.8	1.6	1.3	3.8	2.4	3.8	12	1.3	4.9	2.39	1.95	1.24	0.520
Copper	µg/L	1.0	8.4	16	6.8	8.8	13	45	12	7.5	5.9	6.1	3.2	8.4	12	3.2	45	11.8	8.4	13.39	1.139
Nickel	µg/L	2.0	25	12	12	28	15	35	8.6	11	12	9.1	12	18	12	8.6	35	16.5	12	8.70	0.528
Lead	µg/L	1.0	1.0U	3.9	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	12	3.9	3.9	NA	NA	NA	NA
Zinc	µg/L	5.0	57	110	59	77	110	440	95	46	49	33	28	51	12	28	440	96.3	58	140.8	1.463
Nutrients																					
Ammonia	mg/L	0.10	0.88	0.96	0.66	1.34	1.11	2.76	0.10U	0.39	0.25	0.4	0.39	0.69	12	0.25	2.76	0.83	0.675	0.785	0.946
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.12	0.10U	0.24	0.12	0.10U	0.10U	0.10U	0.10U	0.10U	12	0.12	0.24	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	1.0	1.4	0.98	1.61	1.44	2.79	0.2	0.77	0.58	0.32	0.22	0.71	12	0.20	2.79	1.00	0.875	0.775	0.774
Ortho-P	mg/L	0.03	0.15	0.03U	0.03U	0.03U	0.34	0.04	0.03U	0.15	0.03U	0.35	0.06	0.04	12	0.04	0.35	0.10	0.04	0.130	1.314
Phosphorus (Dissolved)	mg/L	0.03	0.03U	0.07	0.03	0.03	0.34	0.06	0.03U	0.13	0.12	0.31	0.28	0.03U	12	0.03	0.34	0.12	0.065	0.126	1.075
Phosphorus (Total)	mg/L	0.03	0.94	0.15	0.21	0.11	0.42	0.13	0.03U	0.53	0.23	0.56	0.43	0.12	12	0.11	0.94	0.32	0.22	0.274	0.848
TKN	mg/L	0.10	3.49	3.11	1.62	4.1	2.31	10.6	0.88	1.54	1.85	1.21	1.86	3.31	12	0.88	10.6	2.99	2.085	3.04	1.017
Total Nitrogen <sup>3</sup>	mg/L	0.10	4.59	4.61	2.70	5.83	3.85	13.62	1.20	2.41	2.53	1.63	2.18	4.12	12	1.20	13.6	4.11	3.275	3.80	0.926
Microbiological																					
Fecal Coliform	MPN/100 mL	2	3000	3000	NC	400	400	2300	240	1300	50	800	800	30	11	30	3000	1120	800	1153	1.030
Total Coliform	MPN/100 mL	2	22000	24000	NC	13000	2200	7000	1600	8000	1700	160000	5000	11000	11	1600	160000	23227	8000	60694	2.613

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, and Phenanthrene.

<sup>3</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 18 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 506R, Site 12-212 (CSF Outlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	n	Range			Standard Deviation	CV	
			11/12/01 to 11/13/01	11/24/01 to 11/25/01	11/29/01	12/03/01	12/20/01 to 12/21/01	1/27/02 to 1/28/02	3/07/02	11/8/02 to 11/9/02	12/16/02	12/20/02	2/24/03 to 2/25/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max	Mean			Median
Conventionals																						
Dissolved Organic Carbon	mg/L	1.0	69.7	36.5	36.6	32.4	31.2	27.8	83.4	95	36.8	21.3	13.4	13.3	27	13	13.3	95.0	40.3	32.4	26.59	0.659
Conductivity	µmhos/cm	1.0	601	401	93	244	313.9	212	249	323.5	335.8	252	341	418.7	350	13	93	601	318	324	126	0.397
Total Hardness	mg/L	2	210	130	130	110	160	8	110	164	122	139	198	172	128	13	8	210	137.0	130	53.12	0.388
pH	pH units	0.1	7.6	6.8	7.2	6.9	6.7	6.9	6.9	7	7.1	6.4	6.6	6.7	7	13	6.4	7.6	6.9	6.9	0.31	0.045
Total Dissolved Solids	mg/L	1	470	38	60	208	280	1U	292	401	208	203	316	250	242	13	38	470	232	242	136	0.586
Total Organic Carbon	mg/L	1.0	70	39.3	40.3	32.6	31.7	29.1	90.1	96.4	39.4	22.3	16.4	13.8	30.7	13	13.8	96.4	42.5	32.6	27.15	0.639
Total Suspended Solids	mg/L	1	135	292	42	22	118	53	29	26	220	81	184	124	22	13	22	292	103.7	81.0	88	0.851
SVOCs																						
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05	0.05	0.05U	0.05U	0.05U	0.05U	13	0.05	0.05	NA	NA	NA	NA
Additional PAHs <sup>2</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	13	NA	NA	NA	NA	NA	NA
Hydrocarbons																						
Oil & Grease	mg/L	5.0	5U	5U	5U	5U	5U	5U	5	5U	5U	5U	5U	5U	5U	13	5	5	NA	NA	NA	NA
Total Metals																						
Arsenic	µg/L	1.0	4.4	5.9	2.2	2.5	2.1	2.5	2.4	2.4	3.5	2.3	2.7	3.5	2.2	13	2.1	5.9	2.97	2.5	1.183	0.398
Cadmium	µg/L	0.2	1	6.3	1.2	0.8	1.4	1	0.5	1.2	2.9	1.6	2	2.6	1.9	13	0.5	6.3	1.88	1.4	1.693	0.902
Chromium	µg/L	1.0	10	17	3.1	4.4	3.5	6.1	4	5.3	8.9	5.7	8.5	5.7	5.8	13	3.1	17	6.77	5.7	4.03	0.595
Copper	µg/L	1.0	26	25	16	11	8.9	14	25	48	16	11.6	11	7.6	18	13	7.6	48	18.3	16	11.7	0.640
Nickel	µg/L	2.0	16	39	65	11	18	12	14	29	21	13.6	15	12	17	13	11	65	22	16	16.76	0.771
Lead	µg/L	1.0	5.2	5.4	1.5	1.8	1.0U	1.7	1.7	2.1	3.2	1.5	2	1.6	2	13	1.5	5.4	2.35	1.8	1.47	0.628
Zinc	µg/L	5.0	130	140	57	51	37	60	85	300	91	58.5	58	47	74	13	37	300	91	60	80	0.871
Dissolved Metals																						
Arsenic	µg/L	1.0	3	1.9	1.9	1.9	1.7	1.5	2.2	2.1	3.4	1.6	1.1	1.3	1.6	13	1.1	3.4	1.94	1.9	0.666	0.344
Cadmium	µg/L	0.2	0.4	6.1	0.6	0.5	1.1	0.6	0.4	1	1.6	1.2	0.9	1.2	1.4	13	0.4	6.1	1.31	1	1.868	1.429
Chromium	µg/L	1.0	3.2	1.3	2.1	1.8	3	1.6	3	4	2.7	2.4	3	2.7	3.6	13	1.3	4	2.65	2.7	0.80	0.302
Copper	µg/L	1.0	15	9.8	11	7.5	7.3	9.6	22	41	9.6	8.1	5.3	4.3	13	13	4.3	41	12.6	9.6	10.90	0.867
Nickel	µg/L	2.0	11	25	9	9.1	18	9.8	12	25	16	10.7	11	11	14	13	9.0	25	13.97	11.0	5.715	0.409
Lead	µg/L	1.0	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.1	1.0	1.0U	1.0U	1.0U	1	13	1	1.1	NA	NA	NA	NA
Zinc	µg/L	5.0	63	50	46	29	29	54	84	280	49	35.9	32	26	64	13	26	280	65	49	84.1	1.299
Nutrients																						
Ammonia	mg/L	0.10	1.01	1.09	0.65	0.4	0.77	0.69	0.59	1.83	0.45	0.35	0.28	0.48	0.64	13	0.28	1.83	0.71	0.64	0.445	0.627
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.29	0.4	0.25	0.17	0.10U	0.10U	0.10U	0.10U	0.10U	13	0.17	0.40	0.13	0.10	0.123	0.92
Nitrate as N	mg/L	0.10	5.51	5.93	1.99	1.87	7.26	4.25	2.2	5.18	1.96	1.19	0.44	0.36	1.15	13	0.36	7.26	3.02	1.99	2.329	0.770
Ortho-P	mg/L	0.03	0.03U	0.03U	0.14	0.03U	0.17	0.17	0.32	0.15	0.16	0.16	0.35	0.14	0.11	13	0.11	0.35	0.16	0.15	0.088	0.55
Phosphorus (Dissolved)	mg/L	0.03	0.17	0.03U	0.03U	0.03U	0.21	0.38	0.15	0.05	0.26	0.14	0.33	0.3	0.08	13	0.05	0.38	0.17	0.15	0.122	0.724
Phosphorus (Total)	mg/L	0.03	0.36	0.75	0.25	0.19	0.46	0.47	0.23	0.24	0.5	0.33	0.43	0.42	0.08	13	0.08	0.75	0.36	0.36	0.177	0.490
TKN	mg/L	0.10	5.98	4.31	2.75	1.76	0.86	2.52	4.3	8.16	2.21	1.18	1.43	1.64	2.61	13	0.86	8.16	3.05	2.52	2.20	0.722
Total Nitrogen <sup>3</sup>	mg/L	0.10	11.59	10.34	4.84	3.73	8.41	7.17	6.75	13.51	4.27	2.47	1.97	2.1	3.86	13	1.97	13.51	6.23	4.84	3.84	0.616
Microbiological																						
Fecal Coliform	MPN/100 mL	2	2300	24000	3000	2300	900	700	1600	350	80	1700	200	2300	1100	13	80	24000	3118	1600	8503	2.727
Total Coliform	MPN/100 mL	2	50000	24000	24000	30000	160000	3400	7000	5000	600	90000	160000	3000	3000	13	600	160000	43077	24000	59454	1.380

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene,

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 19 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-214 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	n	Range		Mean	Median <sup>2</sup>	Standard Deviation	CV	
			11/12/01 to 11/13/01	11/29/01	12/03/01	12/14/01	12/20/01 to 12/21/01	12/29/01 to 12/31/01	1/27/02 to 1/28/02	3/06/02 to 3/07/02	3/17/02 to 3/18/02	11/8/02 to 11/10/02	12/16/02 to 12/17/02	12/20/02	2/24/03 to 2/27/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max					
Conventionals																									
Dissolved Organic Carbon	mg/L	1.0	38.5	18.6	16.7	21	19.7	29.7J	11	34.2	23.3	37.7	29	11	11.5	12	12.7	15	11	39	22	20	10.0	0.457	
Conductivity	µmhos/cm	1.0	142	72	87	99	100.6	172	78	122	83	118.8	120	111	112	179.3	124	15	72	179	115	112	32	0.279	
Total Hardness	mg/L	2	44	52	34	32	84	68	2	40	19	82	38	30	56	98	40	15	2	98	47.9	40	26.4	0.550	
pH	pH units	0.1	7.2	7.3	7	7.5	6.7	7	6.9	7	6.3	7.3	7.4	6.7	6.8	6.6	7.1	15	6.3	7.5	7.0	7	0.335	0.048	
Total Dissolved Solids	mg/L	1	74	1U	66	70	168	108	96	124	116	143	38	6	144	2	84	15	2	168	83	84	54.4	0.656	
Total Organic Carbon	mg/L	1.0	39.8	20.1	18.3	22.4	20.7	30.1	11.8	35.6	23.4	39.2	32.9	12	12.9	13.2	15.7	15	11.8	39.8	23.2	20.7	10.0	0.432	
Total Suspended Solids	mg/L	1	65	31	9	33	17	21	24	35	28	42	82	4	2	88	1U	15	2	88	32.2	28.0	27.9	0.866	
SVOCs																									
Acenaphthene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.25	0.05U	0.05U	0.05U	0.05U	15	0.25	0.25	NA	NA	NA	NA	
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	15	NA	NA	NA	NA	NA	NA	
Hydrocarbons																									
Oil & Grease	mg/L	5.0	NC	5U	NC	5U	5U	5U	5U	5U	5U	5	5U	5U	5U	5U	5U	13	5	5	NA	NA	NA	NA	
Total Metals																									
Arsenic	µg/L	1.0	2.1	1	1	1.2	1.2	1.0U	1.0U	1.2	1	1.6	1.3	1.6	1.4	1.6	1U	15	1.0	2.1	1.23	1.2	0.389	0.316	
Cadmium	µg/L	0.2	0.4	0.2U	0.2U	0.2	0.3	0.2U	0.2U	0.2	0.2	0.4	0.5	0.2	0.2	0.8	0.2U	15	0.2	0.8	0.26	-0.2	0.210	0.82	
Chromium	µg/L	1.0	7	2.6	1.4	4.2	5.9	2.1	2.6	4	3.2	3.3	3.5	1.4	20	3	2.3	15	1.4	20	4.43	3.2	5.51	1.243	
Copper	µg/L	1.0	42	15	9.1	23	9.9	13	18	22	16	18	15	6.7	6.9	5.5	6.5	15	5.5	42	15.1	15	10.0	0.661	
Nickel	µg/L	2.0	13	3.9	2.7	5	4.7	4	3.3	5.3	3.4	5.8	4.7	2.7	5.3	6.5	2	15	2	13	4.82	4.7	2.90	0.602	
Lead	µg/L	1.0	7	2.3	1.0U	3.9	1.7	1.0U	2.2	2.1	3.6	4.9	4.1	2.4	1.8	1.1	1U	15	1.1	7	2.63	2.2	1.82	0.693	
Zinc	µg/L	5.0	160	54	23	80	39	34	52	70	68	70	63	31	31	30	22	15	22	160	55	52	38	0.687	
Dissolved Metals																									
Arsenic	µg/L	1.0	1.3	1.0U	1	1.0U	1.1	1.0U	1.0U	1.1	1.0U	1.3	1.2	1	1.4	1.2	1.0U	15	1.0	1.4	1.05	-1.0	0.197	0.188	
Cadmium	µg/L	0.2	0.2	0.2U	0.2U	0.2U	0.2	0.2U	0.2U	0.2U	0.2U	0.2	0.2	0.2U	0.2U	0.5	0.2U	15	0.2	0.5	NA	NA	NA	NA	
Chromium	µg/L	1.0	1.7	1.6	1	1.8	5.3	1.5	1.0U	2.2	1.5	2.4	1.4	1.4	4.1	1.7	2.3	15	1.0	5.3	2.04	1.7	1.27	0.622	
Copper	µg/L	1.0	26	11	8.6	14	8	11	17	16	10	15	8.7	5.3	4.9	4	5.6	15	4	26	11.0	10	6.07	0.552	
Nickel	µg/L	2.0	8.8	2.9	2.6	3.6	4.6	3.5	2.5	3.9	3.2	5	3.7	2.2	2.9	5	2	15	2.0	8.8	3.76	3.50	1.827	0.486	
Lead	µg/L	1.0	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	15	NA	NA	NA	NA	NA	NA	
Zinc	µg/L	5.0	73	33	20	50	28	27	22	64	62	49	32	16	20	18	13	15	13	73	35	28	19.7	0.561	
Nutrients																									
Ammonia	mg/L	0.10	1.64	0.72	0.23	1.11	0.59	1.14	0.55	0.93	0.14	0.44	0.18	0.10U	0.32	0.28	0.28	15	0.14	1.64	0.57	0.44	0.464	0.808	
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.1U	0.26	0.10U	0.25	0.10U	0.13	0.10U	0.10U	0.10U	0.10U	0.10U	15	0.13	0.26	0.08	0.05	0.132	1.69	
Nitrate as N	mg/L	0.10	1.95	0.97	0.97	1.21	0.84	1.73	0.69	1.86	0.18	1.61	1.06	0.59	0.48	0.31	0.43	15	0.18	1.95	0.99	0.97	0.581	0.585	
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.03U	0.03U	0.08	0.09	0.03U	0.11	0.21	0.05	0.25	0.28	0.08	15	0.05	0.28	0.09	0.050	0.090	1.03	
Phosphorus (Dissolved)	mg/L	0.03	0.1	0.03	0.06	0.12	0.14	0.11	0.29	0.03U	0.03U	0.05	0.29	0.12	0.39	0.34	0.03U	15	0.03	0.39	0.14	0.11	0.128	0.911	
Phosphorus (Total)	mg/L	0.03	0.22	0.08	0.15	0.18	0.19	0.13	0.32	0.07	0.03U	0.21	0.39	0.18	0.4	0.37	0.03U	15	0.07	0.40	0.20	0.18	0.122	0.610	
TKN	mg/L	0.10	2.98	1.73	1.77	1.95	4.55	5.75	0.7	2.43	0.99	1.42	0.98	0.67	1.39	1.31	0.84	15	0.67	5.75	1.96	1.42	1.53	0.777	
Total Nitrogen <sup>4</sup>	mg/L	0.10	5.03	2.8	2.84	3.26	5.49	7.74	1.49	4.54	1.27	3.16	2.14	1.36	1.97	1.72	1.37	15	1.27	7.74	3.08	2.8	1.94	0.629	
Microbiological																									
Fecal Coliform	MPN/100 mL	2	NC	2300	NC	2300	1700	800	400	1700	1600	1700	30	26	800	1700	900	13	26	2300	1227	1600	792	0.645	
Total Coliform	MPN/100 mL	2	NC	5000	NC	2300	6000	90000	30000	5000	8000	2300	5000	34	30000	17000	13000	13	34	90000	16433	6000	28046	1.707	

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit.

<sup>3</sup>Additional PAHs include Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, Phenanthrene, and

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 20 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-215 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1 11/12/01	Event 2 11/24/01	Event 3 11/29/01	Event 4 12/03/01	Event 5 12/14/01	Event 6	Event 7	Event 8 01/28/02	Event 9 03/07/02	Event 10 03/17/02	Event 11	Event 12	Event 13	Event 14	n	Range		Mean	Median <sup>2</sup>	Standard Deviation	CV
								12/20/01 to 12/21/01	12/29/01 to 12/30/01				11/8/02 to 11/9/02	2/24/03 to 2/27/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max				
Conventionals																							
Dissolved Organic Carbon	mg/L	1.0	39.7	29	17.6	14.8	27.4	16.6	25.9J	12.2	28.5	23.9	72.9	4.9	4	8.7	14	4.0	72.9	23.29	20.75	18.92	0.81
Conductivity	µmhos/cm	1.0	105	87	47	49	79	62	53.9	45.6	80.7	60	103.5	42	40	67	14	40	105	65.84	61.00	22.25	0.34
Total Hardness	mg/L	2	30	21	20	18	28	27	21	2U	16	10	46	18	14	18	14	10	46	21.09	19.00	10.13	0.48
pH	pH units	0.1	7	7.4	7.1	6.9	7.4	7.0	7.2	6.9	6.8	6.3	7	6.7	6.7	7	14	6.3	7.4	6.96	7.00	0.30	0.04
Total Dissolved Solids	mg/L	1	52	22	1U	46	56	60	80	156	64	80	171	32	32	56	14	22	171	65.82	56.00	47.70	0.72
Total Organic Carbon	mg/L	1.0	40	29.1	21.9	16.4	32.1	19	27.2	13.3	33	24	73.5	6	4.4	10.3	14	4.4	73.5	25.01	22.95	18.71	0.75
Total Suspended Solids	mg/L	1	314	170	144	32	115	118	9	32	106	144	67	45	37	6	14	6	314	95.64	86.50	87.21	0.91
SVOCs																							
Benzo(ghi)Perylene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.17	0.05U	0.05U	0.05U	14	0.17	0.17	NA	NA	NA	NA
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.11	0.09	0.05U	0.05U	14	0.09	0.11	NA	NA	NA	NA
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	NA	NA	NA	NA	NA	NA	NA
Hydrocarbons																							
Oil & Grease	mg/L	5.0	NC	5U	5U	NC	5U	5U	5	5U	5U	7	5	5U	5U	5U	12	5	7	NA	NA	NA	NA
Total Metals																							
Arsenic	µg/L	1.0	3.1	2	1.3	1.0U	1.0U	2.1	1.4	1.3	1.3	1.8	1.2	1.6	1.6	1U	14	1.2	3.1	1.51	1.35	0.64	0.43
Cadmium	µg/L	0.2	1.1	0.4	0.2	0.2	0.2U	0.8	0.3	0.2	0.5	0.8	0.7	0.3	0.3	0.2	14	0.2	1.1	0.43	0.30	0.31	0.71
Chromium	µg/L	1.0	13	5.4	5	1.7	1.2	7.5	5.5	2.6	4.5	5.4	3.5	6.7	2.6	3	14	1.2	13	4.83	4.75	3.19	0.66
Copper	µg/L	1.0	55	30	21	9.1	5.6	27	26	16	35	35	45	13	7.2	15	14	5.6	55	24.28	23.50	14.98	0.62
Nickel	µg/L	2.0	19	9.2	6.8	2.8	5	9.1	7.3	4.7	8.5	7.7	14	3.4	2.1	3.4	14	2.1	19	7.36	7.05	4.84	0.66
Lead	µg/L	1.0	15	7.5	5.5	1.0U	1.0U	7.1	6.4	3.4	6	10	14	7	4.2	4.8	14	3.4	15	6.83	6.20	3.96	0.58
Zinc	µg/L	5.0	980	470	250	100	130	370	310	230	350	600	840	170	110	180	14	100	980	364	280	281	0.77
Dissolved Metals																							
Arsenic	µg/L	1.0	1.2	1.4	1.0U	1.0U	1.0U	1.0U	1.0U	1.1	1.0U	1.1	1U	1.3	1.3	1U	14	1.1	1.4	1.04	1.02	0.19	0.19
Cadmium	µg/L	0.2	0.2	0.2	0.2U	0.2	0.2U	0.2	0.2U	0.2U	0.2	0.2	0.3	0.2U	0.2U	0.2U	14	0.2	0.3	NA	NA	NA	NA
Chromium	µg/L	1.0	1	1.6	1.3	1.7	1.0U	2.2	1.0U	1.0U	1.5	1.2	1.8	2.7	1.1	2.8	14	1.0	2.8	1.50	1.40	0.70	0.47
Copper	µg/L	1.0	23	19	12	8	1.6	11	10	8.6	20	12	35	4.5	3.1	7.1	14	1.6	35	12.49	10.50	9.39	0.75
Nickel	µg/L	2.0	8.8	6.3	3.8	2.6	2.0U	4.5	3.2	2.9	5.6	3.6	13	2.0U	2.0U	2.6	14	2.6	13	4.34	3.40	3.45	0.79
Lead	µg/L	1.0	1.0U	1.5	1	1.0U	1.0U	1.0U	1.0U	1.0U	2.1	1.7	3.5	1.6	1.0U	1.3	14	1.0	3.5	1.18	-1.0	0.94	0.80
Zinc	µg/L	5.0	420	290	120	88	14	150	95	100	160	220	710	56	49	110	14	14	710	184	115	200	1.08
Nutrients																							
Ammonia	mg/L	0.10	3.16	1.77	1.38	1.05	1.93	1.13	0.35	1.06	2.24	1.05	2.24	0.39	0.29	0.47	14	0.29	3.16	1.32	1.10	0.87	0.66
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.30	0.10U	0.19	0.10U	0.10U	0.10U	14	0.19	0.30	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	0.6	0.56	0.43	0.49	0.67	0.37	0.64	0.38	0.68	0.10U	0.81	0.18	0.10	0.14	14	0.10	0.81	0.44	0.46	0.24	0.55
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.03U	0.03U	0.03U	0.03	0.08	0.03U	0.05	0.06	0.04	0.03U	14	0.03	0.08	0.03	0.02	0.02	0.85
Phosphorus (Dissolved)	mg/L	0.03	0.04	0.12	0.1	0.07	0.12	0.05	0.12	0.29	0.03U	0.03U	0.04	0.31	0.23	0.03U	14	0.04	0.31	0.11	0.09	0.10	0.91
Phosphorus (Total)	mg/L	0.03	0.44	0.25	0.3	0.17	0.3	0.25	0.24	0.32	0.1	0.32	0.14	0.34	0.25	0.61	14	0.10	0.61	0.29	0.28	0.13	0.46
TKN	mg/L	0.10	4.59	3.54	2.72	1.97	7.74	4.47	4.7	1.24	3.32	1.64	5.45	0.71	0.79	1.12	14	0.71	7.74	3.14	3.02	2.12	0.67
Total Nitrogen <sup>4</sup>	mg/L	0.10	5.29	4.20	3.25	2.56	8.51	4.94	5.44	1.72	4.30	1.84	6.45	0.99	0.99	1.36	14	0.99	8.51	3.70	3.725	2.319	0.626
Microbiological																							
Fecal Coliform	MPN/100 mL	2	NC	1100	3000	NC	2300	400	5000	800	70	500	23	34	220	700	12	23	5000	1179	600	1618	1.373
Total Coliform	MPN/100 mL	2	NC	5000	24000	NC	3000	5000	5000	2300	900	900	240	130	800	13000	12	130	24000	5023	2650	7694	1.532

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit.

<sup>3</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, and Phenanthrene.

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 21 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-216 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	n	Range		Mean	Median <sup>2</sup>	Standard Deviation	CV
			11/12/01 to 11/13/01	Event 2 11/24/01	11/29/01	Event 4 12/14/01	12/20/01 to 12/21/01	12/29/01 to 12/30/01	1/27/02 to 1/28/02	3/06/02 to 3/07/02	3/17/02 to 3/18/02	11/8/02 to 11/10/02	Event 11 12/20/02	2/24/03 to 2/27/03	3/15/03 to 3/16/03		Min <sup>1</sup>	Max				
Conventionals																						
Dissolved Organic Carbon	mg/L	1.0	43	17.4	16.1	20.6	17	42.4J	13.3	39.3	24.3	32.3	38.3	10.2	4.2	13	4.2	43	24.49	20.60	13.24	0.54
Conductivity	µmhos/cm	1.0	256	89	48	78	447	485	148	221	72	149.1	80	87	35	13	35	485	168.85	89.00	151.89	0.90
Total Hardness	mg/L	2	43	23	32	22	120	170	4	61	13	60	96	28	12	13	4	170	52.62	32.00	51.01	0.97
pH	pH units	0.1	7.8	6.6	7.2	7.4	6.7	7.3	6.7	7.1	6.2	7.2	6.6	6.7	6.5	13	6.2	7.8	6.92	6.70	0.45	0.07
Total Dissolved Solids	mg/L	1	98	18	1U	53	204	240	104	116	84	131	236	74	1U	13	18	240	107.40	98.00	79.77	0.74
Total Organic Carbon	mg/L	1.0	44.1	18.4	19.1	24.6	19	43.1	14.3	40.3	25.1	32.7	41.2	10.8	5	13	5	44.1	25.98	24.60	13.24	0.51
Total Suspended Solids	mg/L	1	62	65	64	102	108	95	37	117	99	107	231	65	56	13	37	231	92.92	95.00	53.45	0.58
SVOCs																						
Benzo(ghi)Perylene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05	0.11	0.05U	0.05U	13	0.05	0.11	NA	NA	NA	NA
Fluoranthene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.07	0.06	0.05U	13	0.06	0.07	NA	NA	NA	NA
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.1	0.11	0.05U	13	0.1	0.11	NA	NA	NA	NA
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	13	NA	NA	NA	NA	NA	NA
Hydrocarbons																						
Oil & Grease	mg/L	5.0	NC	5U	5U	8	5U	5U	5U	5U	5	5U	5U	5U	5U	12	5	8	NA	NA	NA	NA
Total Metals																						
Arsenic	µg/L	1.0	1.5	1	1.0U	1	2.2	1.8	1.0U	1.7	1.1	2.2	3	1.4	1.0U	13	1.0	3	1.45	1.4	0.73	0.51
Cadmium	µg/L	0.2	0.4	0.3	0.3	0.3	0.7	0.5	0.3	0.6	0.4	0.7	1	0.5	0.2	13	0.2	1	0.48	0.4	0.23	0.49
Chromium	µg/L	1.0	5.1	3.9	4.2	3.8	10	7.6	2.6	8.9	4.2	8.1	16	16	2.5	13	2.5	16	7.15	5.1	4.72	0.66
Copper	µg/L	1.0	41	20	22	24	24	24	16	39	27	33	60	19	9.4	13	9.4	60	27.57	24.0	13.73	0.50
Nickel	µg/L	2.0	14	5.2	5.7	5.4	11	9.2	4.9	11	5.9	10	14	4.7	2.0U	13	4.7	14	7.99	5.9	3.78	0.47
Lead	µg/L	1.0	7.6	4.2	4.3	3.1	3.6	3.9	2.9	6.6	5.2	5.6	9.4	5.5	3	13	2.9	9.4	4.99	4.3	2.01	0.40
Zinc	µg/L	5.0	230	150	110	100	140	140	85	170	180	230	260	110	60	13	60	260	151.15	140.0	61.71	0.41
Dissolved Metals																						
Arsenic	µg/L	1.0	1.0	1.0U	1.0U	1.0U	1.3	1.0	1.0U	1.0	1.0U	1.3	2.8	1.0U	1.0U	13	1.0	2.8	0.88	0.69	0.82	0.93
Cadmium	µg/L	0.2	0.2U	0.2	0.2	0.2U	0.3	0.2U	0.2	0.3	0.2	0.3	0.4	0.2	0.2U	13	0.2	0.4	0.22	-0.2	0.09	0.40
Chromium	µg/L	1.0	1.1	1.6	2.7	2.7	3.8	2.5	1.2	2.9	1.1	4.5	10	4.5	1.0U	13	1.1	10	3.01	2.7	2.73	0.91
Copper	µg/L	1.0	28	13	16	17	17	14	11	22	13	21	36	9.1	2.9	13	2.9	36	16.92	16.0	8.77	0.52
Nickel	µg/L	2.0	11	3.8	4.3	4.3	6.7	5.4	3.1	6.3	3.3	7.3	13	2.2	2.0U	13	2.2	13	5.55	4.3	3.49	0.63
Lead	µg/L	1.0	1.0U	1.0U	1.8	1.2	1.0U	1.0U	1.0U	1.9	1.0	2.9	3.5	1.4	1.0U	13	1.0	3.5	1.29	-1.0	1.03	0.80
Zinc	µg/L	5.0	130	80	68	61	55	55	43	88	96	150	110	40	20	13	20	150	76.62	68.0	38.13	0.50
Nutrients																						
Ammonia	mg/L	0.10	3.12	0.94	1.19	1.52	1.3	1.35	0.8	1.55	0.10	0.83	0.77	0.46	0.84	13	0.10	3.12	1.14	0.94	0.79	0.69
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.11	0.19	0.10U	0.13	0.11	0.10U	0.12	0.10U	0.10U	13	0.11	0.19	0.09	0.08	0.05	0.55
Nitrate as N	mg/L	0.10	0.26	0.49	0.53	0.53	1.48	1.64	0.58	0.99	0.2	0.82	0.44	0.4	0.12	13	0.12	1.64	0.65	0.53	0.48	0.74
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.03U	0.03U	0.07	0.06	0.07	0.07	0.03U	0.17	0.07	13	0.06	0.17	0.06	0.05	0.05	0.94
Phosphorus (Dissolved)	mg/L	0.03	0.13	0.10	0.03U	0.12	0.07	0.16	0.29	0.03U	0.03U	0.03U	0.14	0.31	0.24	13	0.07	0.31	0.13	0.12	0.09	0.71
Phosphorus (Total)	mg/L	0.03	0.25	0.17	0.1	0.16	0.28	0.23	0.31	0.18	0.22	0.19	0.34	0.34	0.25	13	0.10	0.34	0.23	0.23	0.07	0.32
TKN	mg/L	0.10	3.86	1.89	1.38	2.36	4.07	3.05	1.62	3.37	0.69	1.53	2.59	0.9	1.59	13	0.69	4.07	2.22	1.89	1.11	0.50
Total Nitrogen <sup>4</sup>	mg/L	0.10	4.22	2.48	2.01	2.99	5.66	4.88	2.3	4.49	1.0	2.45	3.15	1.4	1.81	13	1.00	5.66	2.99	2.48	1.45	0.48
Microbiological																						
Fecal Coliform	MPN/100 mL	2	NC	17000	2300	24000	3000	5000	900	2300	900	NC	400	200	800	11	200	24000	5164	2300	8411	2
Total Coliform	MPN/100 mL	2	NC	30000	24000	160000	3000	5000	11000	50000	5000	NC	7000	5000	2700	11	2700	160000	27518	7000	56040	2

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limi

<sup>3</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, and Phenanthrene.

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 22 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-217 (Basin Outlet/CSF Inlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Event 19	Event 20	Event 21	n	Range			Standard Deviation	CV	
			11/24/01 to 11/27/01	11/27/01 to 12/04/01	12/04/01 to 12/08/01	12/08/01 to 12/13/01	12/13/01 to 12/18/01	12/18/01 to 12/22/01	12/22/01 to 12/30/01	12/30/01 to 1/03/02	1/03/02 to 1/09/02	1/09/02 to 1/14/02	1/28/02 to 1/31/02	1/31/02 to 2/06/02	2/06/02 to 2/08/02	3/06/02 to 3/11/02	3/17/02 to 3/21/02	11/12/02 to 12/17/02	12/20/02 to 12/21/02	2/24/03 to 3/5/03	3/15/03 to 3/19/03	4/14/03 to 4/18/03	Min <sup>1</sup>		Max	Mean	Median <sup>2</sup>			
Conventionals																														
Dissolved Organic Carbon	mg/L	1.0	16.3	20.9	22.2	26.5	33.5	37.1	25.5J	32.1	16.8	42.8	15.7	22.6	29.8	30	26.5	29.8	15.8	10.6	18.5	9.8	14.4	21	9.8	42.8	23.68	22.60	8.93	0.38
Conductivity	µmhos/cm	1.0	77.1	163	200	317	254	186	287	322	1694	852	197	317	1541	236	244	155	40	108	210	232	138	21	40	1694	370.00	231.50	467.05	1.26
Total Hardness	mg/L	2	56	89	79	95	140	75	110	200	710	340	73	140	330	110	70	86	80	60	92.5	53	66	21	53	710	145.45	89.00	168.11	1.16
pH	pH units	0.1	7.2	7.0	6.8J	7.7	7.7	7.1	7.1	7.6	7.8	7.3	6.8	7.4	7.6	7.0	6.6	7.0	6.9	6.7	6.9	6.5	6.8	21	6.5	7.8	7.12	7.00	0.39	0.05
Total Dissolved Solids	mg/L	1	52	122	82	158	260	76	116	92	1284	588	48	340	532	160	90	138	116	84	236	84	104	21	48	1284	226.76	116.00	314.07	1.39
Total Organic Carbon	mg/L	1.0	17.7	21.9	22.8	27	34	39.4	25.9	33.5	17.3	43.4	16.3	20.1	30.3	32.4	28.4	31.2	17.9	12.5	18.9	11.4	18	21	11.4	43.4	24.78	22.80	8.86	0.36
Total Suspended Solids	mg/L	1	102	18	1U	7	4	17	1U	8	10	12	15	9	9	18	15	5	30	9	64.5	12	7	21	4	102	17.89	10.00	25.56	1.43
SVOCs																														
Fluorene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05	0.05U	0.05U	0.05U	0.05U	21	0.05	0.05	NA	NA	NA	NA
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	21	NA	NA	NA	NA	NA	NA
Hydrocarbons																														
Oil & Grease	mg/L	5.0	5U	5U	6	NC	NC	5U	5U	NC	NC	NC	5U	NC	NC	5U	5U	5U	5U	5U	5U	5U	5U	14	6	6	NA	NA	NA	NA
Total Metals																														
Arsenic	µg/L	1.0	1.3	1	1	1.1	1.3	1	1.0U	1.2	1.5	1.6	1.0U	1	1.3	1.5	1.1	1.2	1.4	2.1	2.2	1.3	1.0	21	1.0	2.2	1.27	1.2	0.38	0.30
Cadmium	µg/L	0.2	0.2	0.2	0.2U	0.2U	0.2	0.2	0.2U	0.3	1.9	0.3	0.2	0.3	0.6	0.3	0.2U	0.2	0.4	0.2	0.9	0.2	0.2	21	0.2	1.9	0.34	-0.2	0.46	1.36
Chromium	µg/L	1.0	3.3	1.3	1.0U	1.0U	1.0U	8.6	1.0U	1.4	1.4	1.0U	1.8	1.3	1.5	3.2	1.7	2	1.7	2	7	2.7	2	21	1.3	8.6	2.19	1.7	2.15	0.98
Copper	µg/L	1.0	12	11	8.6	9.2	9.2	8.6	7.2	11	7.7	7.7	9.6	9.4	13	16	11	11	12	6.2	8.3	4.9	9.7	21	4.9	16	9.68	9.4	2.52	0.26
Nickel	µg/L	2.0	5.1	4.3	3.6	4.3	4.3	6.7	3.6	5.6	16	8.8	3.6	5.4	10	5.5	3.9	4.1	4.3	2.3	7.7	3	2.8	21	2.3	16	5.47	4.3	3.30	0.60
Lead	µg/L	1.0	2.2	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.6	1.0U	1.0U	1.4	7.2	1.3	1.5	1.3	1.3	21	1.3	7.2	1.08	0.6	1.91	1.77
Zinc	µg/L	5.0	50	69	26	29	22	37	37	67	130	59	40	39	58	55	39	50	43	29	49.1	27.7	40	21	22	130	47.42	40.0	25.03	0.53
Dissolved Metals																														
Arsenic	µg/L	1.0	1.0U	1.0U	1.0U	1.1	1.3	1	1.0U	1.2	1.4	1.4	1.0U	1.0	1.3	1.1	1.0	1.2	1.3	1.2	1.6	1.1	1.0	21	1.0	1.6	1.12	1.1	0.22	0.20
Cadmium	µg/L	0.2	0.2U	0.2U	0.2U	0.2U	0.2U	0.2	0.2U	0.2	1.6	0.2	0.2U	0.2U	0.5	0.2U	0.2U	0.2U	0.2	0.2U	0.6	0.2	0.2	21	0.2	1.6	0.21	0.1	0.41	1.94
Chromium	µg/L	1.0	1.0U	1.0U	1.0U	1.0U	1.0U	8	1.0U	1.0U	1.0U	1.0U	1.2	1	1.5	1.4	1.0U	1.8	1.5	1.5	3	1.1	1.8	21	1.0	8	1.33	-1.0	2.00	1.50
Copper	µg/L	1.0	8.2	9.5	8.4	8.8	8.9	7.8	7	9.1	7.5	6.8	8.5	9.1	9.2	11	9.6	11	7.7	4.8	7.5	3.2	3.9	21	3.2	11	7.98	8.4	2.06	0.26
Nickel	µg/L	2.0	3.2	3.8	3.6	4.3	4.1	6.5	3.6	5.5	16	8.3	3.2	5.2	9.9	4.2	3.6	4.1	3.8	2U	5.7	2.4	2	21	2	16	4.97	4.1	3.44	0.69
Lead	µg/L	1.0	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	21	NA	NA	NA	NA	NA	NA
Zinc	µg/L	5.0	25	59	26	26	22	32	37	55	120	43	35	35	49	31	31	50	26	19	28.4	14.1	34	21	14.1	120	37.98	32.0	24.42	0.64
Nutrients																														
Ammonia	mg/L	0.10	0.33	0.10U	0.36	0.37	0.25	0.44	0.35	0.34	0.13	0.37	0.52	0.16	0.27	0.48	0.10U	0.46	0.17	0.35	0.42	0.2	0.39	21	0.13	0.52	0.32	0.35	0.12	0.39
Nitrite as N	mg/L	0.10	0.10UJ	0.10U	0.10UJ	0.10U	0.10U	0.10	0.10U	0.11	0.10U	0.10U	0.10U	0.10U	0.10U	0.13	0.10U	0.11	0.10U	0.10U	0.10U	0.10U	0.10U	21	0.10	0.13				
Nitrate as N	mg/L	0.10	0.41J	0.45	0.44	0.22	0.42	0.61	0.24	0.52	1.22	0.14	0.72	0.28	2.50	0.80	0.32	0.92	0.82	0.45	0.42	0.21	0.26	21	0.14	2.50	0.59	0.44	0.57	0.97
Ortho-P	mg/L	0.03	0.03UJ	0.03U	0.03U	0.03U	0.03U	0.04	0.03U	0.03U	0.03U	0.03U	0.06	0.08	0.13	0.05	0.07	0.09	1.53	0.03	0.15	0.26	0.12	21	0.03	1.53	0.13	0.04	0.43	3.36
Phosphorus (Dissolved)	mg/L	0.03	0.05	0.08	0.03U	0.03U	0.14	0.07	0.08	0.03	0.03U	0.07	0.33	0.09	0.09	0.03U	0.03U	0.13	0.26	0.14	0.19	0.28	0.03U	21	0.03	0.33	0.10	0.08	0.09	0.91
Phosphorus (Total)	mg/L	0.03	0.12	0.11	0.04	0.03U	0.17	0.12	0.09	0.07	0.03U	0.13	0.34	0.09	0.14	0.06	0.03U	0.16	0.44	0.14	0.25	0.32	0.03U	21	0.04	0.44	0.14	0.12	0.11	0.83
TKN	mg/L	0.10	1.29	1.48	1.22	1.41	1.82	3.57	2.77	1.97	0.84	1.76	0.68	1.97	1.56	2.17	0.19	0.89	1.34	1.25	1.48	1.16	1.05	21	0.19	3.57	1.52	1.41	0.75	0.50
Total Nitrogen <sup>4</sup>	mg/L	0.10	1.80	2.03	1.76	1.73	2.34	4.28	3.11	2.60	2.16	2.00	1.50	2.35	4.16	3.10	0.61	1.92	2.26	1.80	2.00	1.47	1.41	21	0.61	4.28	2.21	2.00	0.89	0.40
Microbiological																														
Fecal Coliform	MPN/100 mL	2	2300	2300	3000	NC	NC	3000	200	NC	NC	NC	400	NC	NC	2300	2U	2700	1100	11	1700	240	5000	14	11	5000	1734	2000	1518	0.88
Total Coliform	MPN/100 mL	2	50000	8000	3000	NC	NC	3000	1300	NC	NC	NC	800	NC	NC	17000	5000	30000	3300	170	24000	17000	13000	14	170	50000	12541	6500	14989	1.20

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit

<sup>3</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, Phenanthrene, and Pyrene.

<sup>4</sup>



Table 23 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-218 (CSF Outlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	Event 15	Event 16	Event 17	Event 18	Event 19	Event 20	Event 21	Range			Standard Deviation	CV		
			11/24/01 to 11/28/01	12/04/01 to 12/04/01	12/04/01 to 12/08/01	12/08/01 to 12/13/01	12/12/01 to 12/18/01	12/18/01 to 12/22/01	12/22/01 to 12/30/01	12/30/01 to 1/03/02	1/03/02 to 1/09/02	1/09/02 to 1/15/02	1/28/02 to 1/31/02	1/31/02 to 2/06/02	2/06/02 to 2/08/02	3/06/02 to 3/12/02	3/17/02 to 3/22/02	11/12/02 to 12/16/02 to 11/12/02	12/16/02 to 12/18/02	12/20/02 to 12/22/02	2/25/03 to 3/5/03	3/15/03 to 3/19/03	4/14/03 to 4/18/03	n	Min <sup>1</sup>	Max			Mean	Median <sup>2</sup>
Conventionals																														
Dissolved Organic Carbon	mg/L	1.0	34.9	25.4	26.6	30.8	31.6	18.9	27.2J	32.7	11.9	32.9	18.1	19.5	37.7	26.3	28	47.1	14.3	17.9	12.1	13.3	17.7	21	11.9	47.1	25.0	26.3	9.5	0.381
Conductivity	µmhos/cm	1.0	215	192	239	398	277	233	330	883	2526	1160	225	329	1765	299	285	213	42	61	169	218	182	21	42	2526	488	239	655	1.344
Total Hardness	mg/L	2	69	53	87	140	110	94	130	760	1300	480	82	150	1800	110	76	100	86	94	91.9	72	86	21	53	1800	284	94	487.1	1.713
pH	pH units	0.1	7.1	7.1	6.8J	7.7	7.6	7.2	6.9	7.9	7.7	7.5	6.9	7.3	7.7	7.1	6.7	7.1	6.9	7.0	7.0	6.6	6.8	21	6.6	7.9	7.2	7.1	0.377	0.053
Total Dissolved Solids	mg/L	1	136	144	108	254	206	174	230	1188	2364	664	194	160	2384	106	148	102	118	134	164	100	123	21	100	2384	438	160	722.9	1.650
Total Organic Carbon	mg/L	1.0	35.9	26.3	27.2	31.1	32.9	19.9	27.9	39.6	12	38.9	18.4	19.3	38.5	28.6	31.9	48.6	22.2	19.8	20.2	14.9	20.2	21	12	48.6	27.3	27.2	9.5	0.349
Total Suspended Solids	mg/L	1	59	6	1U	3	4	17	7	9	11	9	5	10	19	9	6	4	9	1U	2	1U	1U	21	2	59	9.3	6	14.6	1.577
SVOCs																														
PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	21	NA	NA	NA	NA	NA	NA
Hydrocarbons																														
Oil & Grease	mg/L	5.0	5U	5U	5U	NC	NC	5U	5U	NC	NC	NC	5U	NC	NC	5U	5U	5U	5U	5U	5U	5U	5U	14	NA	NA	NA	NA	NA	NA
Total Metals																														
Arsenic	µg/L	1.0	2.7	1.2	1.1	1.4	1.4	1.4	1.1	1.5	1.6	1.5	1.2	1	1.3	1.1	1.1	1.8	1.5	1.4	1.4	1.4	1	21	1.0	2.7	1.39	1.4	0.40	0.287
Cadmium	µg/L	0.2	0.3	0.2U	0.2U	0.2	0.2	0.2U	0.2U	1.2	1.6	0.5	0.2U	0.2	3.3	0.2	0.2U	0.2	0.2	0.2U	0.2	0.2	0.2U	21	0.2	3.3	0.42	-0.2	0.86	2.034
Chromium	µg/L	1.0	4.8	2.6	1.4	1.0U	1.2	1.4	1	1.1	1.0U	1.0U	1.2	3.3	1.7	1.0U	1.9	1U	1.5	2.8	2.1	1.3	21	1	4.8	1.60	1.3	1.09	0.686	
Copper	µg/L	1.0	18	8.8	8.3	8.2	12	7.8	6.9	7.8	7.2	7.6	7.9	10	10	10	9	13	7.4	6	5	4.7	6.8	21	4.7	18	8.7	7.9	3.07	0.354
Nickel	µg/L	2.0	7	3.6	3.7	4.5	5.2	3.4	3.8	11	13	7.9	3.1	4.8	25	3.9	3.9	4	3	2.5	2.8	2.6	2.0U	21	2.5	25	5.71	3.9	5.78	1.013
Lead	µg/L	1.0	3.4	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.4	1.0U	1.0U	1.0U	1.0U	1.0U	21	1.4	3.4	NA	NA	NA	NA
Zinc	µg/L	5.0	59	12	18	16	47	21	23	75	95	43	28	27	140	28	25	30	17	15	15.5	15	22	21	12	140	37	25	34	0.915
Dissolved Metals																														
Arsenic	µg/L	1.0	2	1.1	1.1	1.4	1.2	1.4	1.0	1.4	1.6	1.4	1.1	1.0	1.3	1.0	1.1	1.5	1.1	1.4	1.4	1.2	1.0	21	1.0	2	1.27	1.2	0.26	0.202
Cadmium	µg/L	0.2	0.2	0.2U	0.2U	0.2U	0.2U	0.2	0.2U	1.1	1.6	0.3	0.2U	0.2	3.3	0.2U	0.2U	0.2U	0.2	0.2U	0.2	0.2	0.2U	21	0.2	3.3	0.37	0.1	0.87	2.328
Chromium	µg/L	1.0	1.1	1.1	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1	1.1	3.3	1.2	1.0U	1.6	1.0U	1.3	2.8	1.4	1.3	21	1.0	3.3	1.07	-1.0	0.80	0.749
Copper	µg/L	1.0	11	8.3	8.2	8.2	11	7.8	6.6	7	6.8	6.5	7.5	9.8	8.3	9.6	8.9	12	6.8	5.4	5	4.3	6	21	4.3	12	7.9	7.8	2.05	0.261
Nickel	µg/L	2.0	4.3	3.5	3.6	4	4.9	3.4	3.8	10	13	7.1	3	4.8	24	3.8	3.9	3.7	2.7	2.2	2.7	2.5	2.0U	21	2.2	24	5.34	3.8	5.58	1.046
Lead	µg/L	1.0	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	21	NA	NA	NA	NA	NA	NA
Zinc	µg/L	5.0	57	9.6	17	16	40	19	23	69	92	35	27	26	140	22	25	30	17	13	14.5	13	15	21	9.6	140	34	23	33.7	0.982
Nutrients																														
Ammonia	mg/L	0.10	0.56	0.10U	0.26	0.34	0.51	0.26	0.37	0.15	0.27	0.36	0.32	0.14	0.12	0.16	0.10U	0.54	0.12	0.22	0.23	0.15	0.29	21	0.12	0.56	0.26	0.26	0.147	0.557
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	0.19	0.10U	0.10U	0.33	0.10U	0.10U	0.10U	0.10U	0.14	0.10U	0.14	0.10	0.10U	0.10U	0.10U	0.10U	21	0.10	0.33	0.07	0.04	0.087	1.325
Nitrate as N	mg/L	0.10	8.22	0.59	0.81	0.64	0.68	4.39	1.04	2.51	2.26	0.72	1.61	0.59	3.09	1.05	0.43	2.21	3.59	1.11	0.88	0.36	0.55	21	0.36	8.22	1.78	1.04	1.993	1.121
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.04U	0.37	0.03U	0.03U	0.25	0.06	0.19	0.51	0.155	0.12	0.05	0.28	0.69	0.15	0.23	0.30	0.22	21	0.05	0.69	0.18	0.11	0.182	0.993
Phosphorus (Dissolved)	mg/L	0.03	0.39	0.08	0.09	0.17	0.08	0.26	0.13	0.16	0.15	0.2	0.38	0.11	0.17	0.03U	0.03U	0.3	0.33	0.14	0.2	0.25	0.03U	21	0.08	0.39	0.18	0.16	0.106	0.590
Phosphorus (Total)	mg/L	0.03	0.3	0.18	0.12	0.13	0.09	0.31	0.14	0.18	0.16	0.22	0.38	0.12	0.19	0.06	0.21	0.32	0.35	0.14	0.22	0.34	0.16	21	0.06	0.38	0.21	0.18	0.093	0.454
TKN	mg/L	0.10	3.37	1.14	0.79	1.02	2.48	3.19	1.98	1.15	0.78	1.64	0.58	1.82	2.19	1.67	0.67	1.06	1.14	0.56	1.04	2.57	0.86	21	0.56	3.37	1.51	1.14	0.85	0.565
Total Nitrogen <sup>4</sup>	mg/L	0.10	11.69	1.83	1.70	1.76	3.26	7.77	3.13	3.76	3.36	2.46	2.29	2.51	5.38	2.86	1.20	3.41	4.83	1.77	2.02	3.03	1.51	21	1.20	11.69	3.41	2.86	2.59	0.762
Microbiological																														
Fecal Coliform	MPN/100 mL	2	5000	800	1300	NC	NC	400	200	NC	NC	NC	1300	NC	NC	5000	130	2200	1300	240	5000	240	8000	14	130	8000	2222	1300	2559	1.152
Total Coliform	MPN/100 mL	2	30000	2300	1300	NC	NC	8000	400	NC	NC	NC	9000	NC	NC	11000	900	50000	2300	1600	90000	13000	8000	14	400	90000	16271	8000	27652	1.699

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit.

<sup>3</sup>PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, Phenanthrene, and Pyrene.

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 24 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 604R, Site 12-219 (Overflow)

Parameter	Units	Reporting Limit	Event 1 12/15/02 to 12/16/02	Event 2 03/16/03 to 03/17/03	n	Range		Mean	Median	Standard Deviation	CV
						Min <sup>1</sup>	Max				
Conventionals											
Dissolved Organic Carbon	mg/L	1.0	25	10.7	2	10.7	25.0	NA	NA	NA	NA
Conductivity	µmhos/cm	1.0	91	257	2	91	257	NA	NA	NA	NA
Total Hardness	mg/L	2	26	78	2	26	78	NA	NA	NA	NA
pH	pH units	0.1	7	6.5	2	6.5	7	NA	NA	NA	NA
Total Dissolved Solids	mg/L	1	32	142	2	32	142	NA	NA	NA	NA
Total Organic Carbon	mg/L	1.0	27.6	12	2	12	27.6	NA	NA	NA	NA
Total Suspended Solids	mg/L	1	61	33	2	33	61	NA	NA	NA	NA
SVOCs											
Additional PAHs <sup>c</sup>	µg/L	0.05	0.05U	0.05U	2	NA	NA	NA	NA	NA	NA
Hydrocarbons											
Oil & Grease	mg/L	5.0	5U	NC	1	NA	NA	NA	NA	NA	NA
Total Metals											
Arsenic	µg/L	1.0	1.1	1.4	2	1.1	1.4	NA	NA	NA	NA
Cadmium	µg/L	0.2	0.3	0.5	2	0.3	0.5	NA	NA	NA	NA
Chromium	µg/L	1.0	3.2	2.5	2	2.5	3.2	NA	NA	NA	NA
Copper	µg/L	1.0	12	8.9	2	8.9	12	NA	NA	NA	NA
Nickel	µg/L	2.0	3.7	74	2	3.7	74	NA	NA	NA	NA
Lead	µg/L	1.0	2.7	1.0U	2	2.7	2.7	NA	NA	NA	NA
Zinc	µg/L	5.0	44	64	2	44	64	NA	NA	NA	NA
Dissolved Metals											
Arsenic	µg/L	1.0	1U	1.4	2	1.4	1.4	NA	NA	NA	NA
Cadmium	µg/L	0.2	0.2	0.2U	2	0.2	0.2	NA	NA	NA	NA
Chromium	µg/L	1.0	1.2	1.5	2	1.2	1.5	NA	NA	NA	NA
Copper	µg/L	1.0	7.2	4.8	2	4.8	7.2	NA	NA	NA	NA
Nickel	µg/L	2.0	3	4	2	3	4	NA	NA	NA	NA
Lead	µg/L	1.0	1.0U	1.0U	2	NA	NA	NA	NA	NA	NA
Zinc	µg/L	5.0	24	22	2	22	24	NA	NA	NA	NA
Nutrients											
Ammonia	mg/L	0.10	0.17	0.10U	2	0.17	0.17	NA	NA	NA	NA
Nitrite as N	mg/L	0.10	0.10U	0.10U	2	NA	NA	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	0.67	0.69	2	0.67	0.69	NA	NA	NA	NA
Ortho-P	mg/L	0.03	0.15	0.31	2	0.15	0.31	NA	NA	NA	NA
Phosphorus (Dissolved)	mg/L	0.03	0.23	0.34	2	0.23	0.34	NA	NA	NA	NA
Phosphorus (Total)	mg/L	0.03	0.3	0.44	2	0.30	0.44	NA	NA	NA	NA
TKN	mg/L	0.10	0.86	0.94	2	0.86	0.94	NA	NA	NA	NA
Total Nitrogen <sup>d</sup>	mg/L	0.10	1.63	1.73	2	1.63	1.73	NA	NA	NA	NA
Microbiological											
Fecal Coliform	MPN/100 mL	2	800	NC	1	NA	NA	NA	NA	NA	NA
Total Coliform	MPN/100 mL	2	13000	NC	1	NA	NA	NA	NA	NA	NA

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, and Phenanthrene.

<sup>3</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.



Table 25 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 785L, Site 12-220 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1 11/12/01	Event 2 11/24/01	Event 3 11/29/01	Event 4 12/20/01 to 12/21/01	Event 5 1/27/02 to 1/28/02	Event 6 3/06/02 to 3/07/02	Event 7 03/17/02	Event 8 11/8/02 to 11/9/02	Event 9 12/16/02	Event 10 12/20/02	Event 11 2/24/03 to 2/25/03	Event 12 3/15/03 to 3/16/03	Event 13 4/14/03 to 4/15/03	n	Range		Mean	Median <sup>2</sup>	Standard Deviation	CV
																	Min <sup>1</sup>	Max				
Conventionals																						
Dissolved Organic Carbon	mg/L	1.0	25.3	21.3	18.4	29.2	14.9	27	20.6	30.3	40	16.8	20.6	14.6	22.3	13	14.6	40.0	23.2	21.3	7.4	0.320
Conductivity	µmhos/cm	1.0	76	136	57	91.6	98	69.1	54	91	88	12	66	53.3	96	13	12	136	76	76	31	0.407
Total Hardness	mg/L	2	21	43	34	41	2	19	11	36	24	22	32	18	34	13	2	43	25.9	24.0	12.3	0.473
pH	pH units	0.1	7.5	6.9	7	6.8	6.9	6.6	6.3	6.9	7.6	7.1	6.8	6.5	7.1	13	6.3	7.6	6.9	6.9	0.37	0.053
Total Dissolved Solids	mg/L	1	50	64	1U	60	180	64	140	64	78	70	88	36	72	13	36	180	76	64.0	43.9	0.575
Total Organic Carbon	mg/L	1.0	25.9	24.2	20.5	31.3	16.2	27.1	22.2	31.3	48	18.3	24.8	17	15.2	13	15.2	48	24.8	24.2	9.4	0.378
Total Suspended Solids	mg/L	1	223	179	58	67	46	87	105	60	91	33	4	44	11	13	4	223	77.5	60.0	65.1	0.840
SVOCs																						
Benzo(b)Fluoranthene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	13	0.05	0.05	NA	NA	NA	NA
Benzo(ghi)Perylene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.17	0.05U	0.05U	0.05U	0.05U	0.05U	13	0.17	0.17	NA	NA	NA	NA
Fluoranthene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.1	0.05U	0.05U	0.05U	0.05U	0.05U	13	0.1	0.1	NA	NA	NA	NA
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.13	0.05U	0.05U	0.05U	0.05U	0.05U	13	0.13	0.13	NA	NA	NA	NA
Additional PAHs <sup>3</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	13	NA	NA	NA	NA	NA	NA
Hydrocarbons																						
Oil & Grease	mg/L	5.0	5U	5U	6	5U	NC	13	5U	5U	5U	5U	5U	5U	5U	12	6	13	NA	NA	NA	NA
Total Metals																						
Arsenic	µg/L	1.0	2.5	2.2	1.2	1.5	1.9	1.4	1.7	2.8	2.5	7.7	3.7	2.4	2.6	13	1.2	7.7	2.62	2.4	1.936	0.738
Cadmium	µg/L	0.2	0.9	0.6	0.2	0.2U	0.2U	0.3	0.2	0.2	0.2	0.2U	0.2U	0.2U	0.4	13	0.2	0.9	0.26	-0.2	0.263	1.018
Chromium	µg/L	1.0	9.6	6.4	2.9	12	2	4	3.9	2.4	2.4	1.9	2.8	1.5	5.4	13	1.5	12	4.40	2.9	3.34	0.759
Copper	µg/L	1.0	46	37	12	12	11	25	24	26	16	8.1	11	6.4	25	13	6.4	46	20.0	16	12.2	0.612
Nickel	µg/L	2.0	12	10	4.9	6.4	2.9	5.5	4.4	6.5	2.9	2.0U	2.4	2U	6.1	13	2.4	12	5.16	4.9	3.24	0.628
Lead	µg/L	1.0	22	9.1	3.4	4	3	6	7.8	4.2	4.7	1.7	3.1	1.7	10	13	1.7	22	6.21	4.2	6.07	0.978
Zinc	µg/L	5.0	1100	570	190	160	180	430	500	390	190	110	130	70	380	13	70	1100	338	190	302	0.892
Dissolved Metals																						
Arsenic	µg/L	1.0	1	2.1	1	1.2	1.6	1.1	1.3	2.3	2.5	1.9	2.3	2.3	1.6	13	1.0	2.5	1.71	1.6	0.558	0.327
Cadmium	µg/L	0.2	0.2	0.2	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	13	0.2	0.2	NA	NA	NA	NA
Chromium	µg/L	1.0	1.2	1.1	1.8	12	1.0U	1.8	1.0U	1.2	1.2	1.0U	1.3	1.0U	1.9	13	1.1	12	1.92	1.2	4.16	2.160
Copper	µg/L	1.0	19	13	9.5	8.6	7.9	16	12	20	11	6	7.5	4.6	9.4	13	4.6	20	11.1	9.5	4.86	0.437
Nickel	µg/L	2.0	5.6	3.9	4.8	5.8	2.1	4	2.4	5.5	2.6	2.0U	2.0U	2.0U	3.5	13	2.1	5.8	3.46	3.5	1.61	0.465
Lead	µg/L	1.0	1.0U	1.0U	1.1	1.0U	1.0U	3.3	1.4	1.0U	1.5	1.0U	1.0U	1.0U	2.2	13	1.1	3.3	0.99	0.67	0.98	0.985
Zinc	µg/L	5.0	450	160	140	100	99	280	180	290	92	69	60	36	90	13	36	450	157	100	123.4	0.784
Nutrients																						
Ammonia	mg/L	0.10	0.42	0.51	0.62	0.44	0.45	0.9	0.10U	0.5	0.18	0.13	0.10U	0.13	0.26	13	0.13	0.90	0.36	0.42	0.253	0.701
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	13	NA	NA	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	0.87	0.61	0.56	0.31	0.44	0.58	0.10U	0.76	0.47	0.26	0.14	0.12	0.32	13	0.12	0.87	0.43	0.44	0.252	0.593
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.07	0.18	0.06	0.03U	0.35	0.07	0.30	0.14	0.10	13	0.06	0.35	0.11	0.07	0.113	1.059
Phosphorus (Dissolved)	mg/L	0.03	0.09	0.20	0.07	0.06	0.33	0.03U	0.03U	0.03U	0.28	0.12	0.34	0.27	0.03U	13	0.06	0.34	0.15	0.09	0.123	0.845
Phosphorus (Total)	mg/L	0.03	0.3	0.35	0.25	0.11	0.47	0.11	0.21	0.09	0.37	0.21	0.37	0.31	0.23	13	0.09	0.47	0.26	0.25	0.117	0.451
TKN	mg/L	0.10	2.7	2.27	1.46	6.65	0.96	2.34	1.25	1.06	1.43	1.06	0.37	0.86	1.26	13	0.37	6.65	1.82	1.26	1.84	1.011
Total Nitrogen <sup>4</sup>	mg/L	0.10	3.67	2.98	2.12	7.06	1.50	3.02	1.45	1.92	2.0	1.42	0.61	1.08	1.68	13	0.61	7.06	2.35	1.92	1.82	0.777
Microbiological																						
Fecal Coliform	MPN/100 mL	2	200	5000	3000	5000	NC	1600	80	5000	6000	130	50	500	900	12	50	6000	2288	1250	2368	1.035
Total Coliform	MPN/100 mL	2	160000	13000	24000	30000	NC	1600	240	24000	14000	2300	3000	1100	2300	12	240	160000	22962	8000	56302	2.452

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Negative median values indicate fifty percent of the values are less than the reporting limit.

<sup>3</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, and Phenanthrene.

<sup>4</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 26 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 785L, Site 12-221 (Basin Inlet)

Parameter	Units	Reporting Limit	Event 1 11/24/01	Event 2 11/29/01	Event 3	Event 4 1/27/02 to 1/28/02	Event 5 3/06/02 to 3/07/02	Event 6 03/17/02	Event 7 11/8/02 to 11/9/02	Event 8 12/16/02	Event 9 12/20/02	Event 10	Event 11	Event 12	n	Range		Mean	Median	Standard Deviation	CV
					12/20/01 to 12/21/01							2/24/03 to 2/25/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max				
Conventionals																					
Dissolved Organic Carbon	mg/L	1.0	26.3	33.4	24.8	19.7	45.8	37.6	60.6	33.9	11.5	11	10.2	15.7	12	10.2	60.6	27.5	25.6	15.9	0.579
Conductivity	µmhos/cm	1.0	129	142	144	108	146.8	138	122	78	15	52	49.9	80	12	15	147	100	115	45	0.449
Total Hardness	mg/L	2	45	72	57	8	50	38	80	32	26	26	22	24	12	8	80	40.0	35.0	22.0	0.549
pH	pH units	0.1	7.8	7.3	7.1	6.9	7.0	6.4	6.9	8.2	7.2	6.8	7.2	7.2	12	6.4	8.2	7.17	7.2	0.49	0.068
Total Dissolved Solids	mg/L	1	50	156	92	240	48	168	133	22	22	60	6	66	12	6	240	89	63.0	73.2	0.826
Total Organic Carbon	mg/L	1.0	26.6	36.5	25.6	21.5	49.2	40.7	64.8	38.8	13.1	13.6	12.1	19.3	12	12.1	64.8	30.2	26.1	16.7	0.554
Total Suspended Solids	mg/L	1	85	40	40	2	61	101	107	116	19	11	44	7	12	2	116	52.8	42.0	41.2	0.781
SVOCs																					
Benzo(ghi)Perylene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.08	0.05U	0.05U	0.05U	0.05U	0.05U	12	0.08	0.08	NA	NA	NA	NA
Fluorene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.06	0.05U	0.05U	0.05U	12	0.06	0.06	NA	NA	NA	NA
Phenanthrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05	0.05U	0.05U	0.05U	0.05U	12	0.05	0.05	NA	NA	NA	NA
Pyrene	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.06	0.05U	0.05U	0.05U	0.05U	0.05U	12	0.06	0.06	NA	NA	NA	NA
Additional PAHs <sup>2</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	12	NA	NA	NA	NA	NA	NA
Hydrocarbons																					
Oil & Grease	mg/L	5.0	5U	5U	5U	5U	5U	6	5U	5U	5U	5U	5U	5U	12	6	6	NA	NA	NA	NA
Total Metals																					
Arsenic	µg/L	1.0	2.4	2.2	1.9	2	2	2	3.3	2.8	1.3	1.5	1.6	1	12	1.0	3.3	2.00	2	0.7	0.327
Cadmium	µg/L	0.2	0.2	0.3	0.3	0.2	0.4	0.4	0.8	0.3	0.2	0.3	0.2U	0.2U	12	0.2	0.8	0.30	0.3	0.2	0.674
Chromium	µg/L	1.0	5.6	6.6	4.2	1.9	4.2	5.4	6.7	5.1	1U	3.2	1.6	2.1	12	1.6	6.7	3.98	4.2	2.0	0.504
Copper	µg/L	1.0	23	24	22	18	33	35	89	28	11	13	7.8	15	12	7.8	89	26.6	22.5	24.9	0.938
Nickel	µg/L	2.0	6	6.5	5.2	3.9	7	11	17	4.8	2.3	3	2U	2.8	12	2.3	17	5.89	5	4.7	0.796
Lead	µg/L	1.0	4.8	5.4	3.7	1.0U	2.8	7	7.5	7.7	1.9	3.3	1.7	3.1	12	1.7	7.7	4.17	3.5	2.3	0.562
Zinc	µg/L	5.0	120	150	110	93	140	270	610	180	76	83	41	69	12	41	610	162	115	179	1.106
Dissolved Metals																					
Arsenic	µg/L	1.0	2	1.9	1.7	2	1.7	1.2	2.3	2.1	1.0U	1.4	1.4	1.0U	12	1.2	2.3	1.65	1.7	0.4	0.257
Cadmium	µg/L	0.2	0.2	0.2	0.2U	0.2	0.2	0.2U	0.4	0.2U	0.2U	0.2U	0.2U	0.2U	12	0.2	0.4	NA	NA	NA	NA
Chromium	µg/L	1.0	3.3	5.2	3	1.7	3.2	1.5	2.8	2.7	1.0U	1.9	1.3	2	12	1.3	5.2	2.46	2.35	1.2	0.503
Copper	µg/L	1.0	23	20	16	16	26	17	56	16	8	7.6	6.6	14	12	6.6	56	18.9	16	14.9	0.789
Nickel	µg/L	2.0	4.3	5.8	4.5	3.8	7	4	13	4.1	2.3	2.2	2.0U	2.0U	12	2.2	13	4.47	4.05	3.5	0.785
Lead	µg/L	1.0	1.0U	1.8	1.0U	1.0U	1.1	1.0U	1.4	2	1.0U	1.0U	1.0U	1	12	1.0	2	0.92	0.77	0.6	0.606
Zinc	µg/L	5.0	33	100	65	90	110	110	390	54	46	34	28	68	12	28	390	94.0	66.5	119.5	1.271
Nutrients																					
Ammonia	mg/L	0.10	0.47	0.7	0.44	0.51	0.61	0.10U	1.21	0.35	0.10U	0.2	0.15	0.4	12	0.15	1.21	0.44	0.42	0.33	0.762
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.11	0.10U	0.10U	0.10U	0.10U	0.10U	12	0.11	0.11	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	0.42	0.93	0.68	0.66	1.03	0.10U	1.13	0.3	0.24	0.13	0.11	0.18	12	0.11	1.13	0.49	0.36	0.39	0.798
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.05	0.08	0.03U	0.03U	0.03U	0.21	0.05	0.03U	12	0.05	0.21	0.04	0.014	0.07	1.869
Phosphorus (Dissolved)	mg/L	0.03	0.03U	0.05	0.03	0.31	0.03U	0.03U	0.03U	0.03U	0.12	0.2	0.23	0.10	12	0.03	0.31	0.09	0.04	0.11	1.154
Phosphorus (Total)	mg/L	0.03	0.03U	0.11	0.08	0.49	0.08	0.16	0.12	0.13	0.12	0.22	0.26	1.09	12	0.08	1.09	0.24	0.13	0.34	1.412
TKN	mg/L	0.10	1.67	1.95	5.79	1.24	1.7	0.1	1.44	1.02	0.7	0.76	0.75	2.42	12	0.10	5.79	1.63	1.34	1.66	1.022
Total Nitrogen <sup>3</sup>	mg/L	0.10	2.19	2.98	6.57	2	2.83	0.3	2.68	1.42	1.04	0.99	0.96	2.7	12	0.30	6.57	2.22	2.10	1.78	0.801
Microbiological																					
Fecal Coliform	MPN/100 mL	2	3000	1300	800	1400	23	50	23	300	2U	3000	170	500	12	23	3000	881	400	1135	1.288
Total Coliform	MPN/100 mL	2	17000	5000	2300	24000	300	1600	2300	8000	220	13000	8000	13000	12	220	24000	7893	6500	7726	0.979

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Indeno(1,2,3-c,d)Pyrene, and Naphthalene.

<sup>3</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 27 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 785L, Site 12-222 (Basin Outlet/CSF Inlet)

Parameter	Units	Reporting Limit	Event 1 11/12/01	Event 2 11/24/01	Event 3 11/29/01	Event 4 12/03/01	Event 5 12/20/01 to 12/21/01	Event 6 1/27/02 to 1/28/02	Event 7 3/06/02 to 3/07/02	Event 8 11/8/02 to 11/9/02	Event 9 12/16/02 to 12/17/02	Event 10 12/20/02	Event 11 2/24/03 to 2/25/03	Event 12 3/15/03 to 3/16/03	Event 13 4/15/03 to 4/15/03	n	Range		Mean	Median	Standard Deviation	CV
																	Min <sup>1</sup>	Max				
Conventionals																						
Dissolved Organic Carbon	mg/L	1.0	37.8	19.6	23.8	21.6	23.1J	8.7	29.9	29.3	33.3	17.3	26.5	12.6	21.6	13	8.7	37.8	23.5	23.1	8.2	0.351
Conductivity	µmhos/cm	1.0	139	100	91	86	97.5	75	100	92	18	24	94.2	70.8	110	13	18	139	84	92	34	0.400
Total Hardness	mg/L	2	41	35	52	53	46	2	28	32	26	32	52	22	34	13	2	53	35.0	34.0	14.8	0.423
pH	pH units	0.1	7.1	6.8	7.2	7	5.6	7	6.8	7.1	7	7.1	6.9	6.6	6.9	13	5.6	7.2	6.9	7	0.48	0.070
Total Dissolved Solids	mg/L	1	74	2	28	74	62	1U	56	61	51	28	114	42	90	13	2	114	53	56.0	33.9	0.641
Total Organic Carbon	mg/L	1.0	38.9	20.8	26.8	23.4	23.5	11	32.5	30.2	37.1	23.9	31	15.1	25.3	13	11	38.9	26.1	25.3	8.1	0.312
Total Suspended Solids	mg/L	1	82	162	22	3	49	77	25	36	74	20	43	25	70	13	3	162	52.9	43.0	44.1	0.833
SVOCs																						
PAHs <sup>2</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	13	NA	NA	NA	NA	NA	NA
Hydrocarbons																						
Oil & Grease	mg/L	5.0	5U	5U	5U	5U	5U	5U	10	5U	5U	5U	5	5U	5U	13	5	10	NA	NA	NA	NA
Total Metals																						
Arsenic	µg/L	1.0	2.6	2.8	1.4	1.4	1.6	2.6	1.4	2.9	2.9	2.1	2.9	2.1	1.8	13	1.4	2.9	2.19	2.1	0.62	0.284
Cadmium	µg/L	0.2	0.4	0.2	0.2U	0.2U	0.2U	0.2	0.2	0.2U	0.2	0.2U	0.2U	0.2U	0.2U	13	0.2	0.4	NA	NA	NA	NA
Chromium	µg/L	1.0	7.4	6.4	2.8	2.2	2.2	5.4	3.3	2.2	2.4	1U	2.5	1.5	2	13	1.5	7.4	3.17	2.4	2.03	0.641
Copper	µg/L	1.0	35	19	13	11	10	17	19	20	14	8.4	9	6.2	11	13	6.2	35	14.8	13	8.07	0.545
Nickel	µg/L	2.0	10	5.9	3.8	3.2	3	5.4	4.4	4.8	2.8	2.0U	3.1	2.0U	2.3	13	2.3	10	3.98	3.2	2.44	0.613
Lead	µg/L	1.0	8	6.9	2.4	1.1	1.7	7.2	3.8	2.8	4	1.2	1.2	1.7	1.5	13	1.1	8	3.35	2.4	2.53	0.755
Zinc	µg/L	5.0	430	210	130	110	76	210	180	220	120	72	54	49	85	13	49	430	150	120	111.61	0.746
Dissolved Metals																						
Arsenic	µg/L	1.0	1.5	1.9	1.4	1.3	1.3	1.6	1.1	2.5	2.7	1.6	2.6	1.7	1.7	13	1.1	2.7	1.8	1.6	0.53	0.301
Cadmium	µg/L	0.2	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	13	NA	NA	NA	NA	NA	NA
Chromium	µg/L	1.0	2	2.3	2.2	2.1	1.4	1.0U	1.7	2	2.3	1.0U	1.9	1.1	2.0	13	1.1	2.3	1.8	2.0	0.46	0.255
Copper	µg/L	1.0	22	13	12	9.2	8.5	6	14	16	11	8.2	8.9	4.8	10	13	4.8	22	11.0	10	4.73	0.428
Nickel	µg/L	2.0	6.9	3	3.4	3	2.3	2.0U	3.6	3.9	2.6	2.0U	2.3	2.0U	2.0U	13	2.3	6.9	2.8	2.6	1.67	0.590
Lead	µg/L	1.0	1.0U	1.3	1.2	1.0U	1.0U	1.0U	1.1	1.0U	1.9	1.0U	1.0U	1.0U	1.2	13	1.1	1.9	0.9	0.8	0.48	0.521
Zinc	µg/L	5.0	240	68	110	87	58	43	150	180	86	65	49	30	83	13	30	240	96.1	83	62.84	0.654
Nutrients																						
Ammonia	mg/L	0.10	1.28	0.41	0.75	0.46	0.46	0.41	0.68	0.47	0.19	0.36	0.15	0.10U	0.21	13	0.15	1.28	0.46	0.41	0.34	0.739
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	13	NA	NA	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	0.92	0.41	0.68	0.63	0.33	0.33	0.72	0.72	0.39	0.32	0.12	0.10	0.22	13	0.10	0.92	0.45	0.39	0.26	0.572
Ortho-P	mg/L	0.03	0.03U	0.03U	0.03U	0.03U	0.03U	0.05	0.12	0.05	0.05	0.07	0.19	0.10	0.09	13	0.05	0.19	0.06	0.05	0.05	0.82
Phosphorus (Dissolved)	mg/L	0.03	0.05	0.03	0.06	0.09	0.03	0.28	0.03U	0.05	0.03U	0.12	0.39	0.26	0.03U	13	0.03	0.39	0.11	0.05	0.13	1.192
Phosphorus (Total)	mg/L	0.03	0.19	0.07	0.21	0.14	0.11	0.35	0.05	0.16	0.26	0.19	0.39	0.28	0.03U	13	0.05	0.39	0.19	0.19	0.11	0.602
TKN	mg/L	0.10	2.7	1.31	1.58	1.05	2.36	1.1	1.04	1.59	0.95	1.14	1.7	0.77	1.4	13	0.77	2.70	1.44	1.31	0.58	0.403
Total Nitrogen <sup>3</sup>	mg/L	0.10	3.72	1.82	2.36	1.78	2.79	1.53	1.86	2.41	1.44	1.56	1.92	0.97	1.72	13	0.97	3.72	1.99	1.82	0.73	0.368
Microbiological																						
Fecal Coliform	MPN/100 mL	2	5000	3000	2300	8000	3000	400	900	24000	1300	80	900	170	500	13	80	24000	3812	1300	7725	2.027
Total Coliform	MPN/100 mL	2	24000	11000	8000	13000	3000	2300	130000	24000	30000	3000	14000	13000	13000	13	2300	130000	22177	13000	42103	1.899

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

<sup>2</sup>Additional PAHs include Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)Anthracene, Benzo(a)Pyrene, Benzo(b)Fluoranthene, Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, Phenanthrene, and Pyrene.

<sup>3</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



Table 28 Summary of Analytical Results For All Constituents Measured In Storm Water Runoff From CSF System 785L, Site 12-223 (CSF Outlet)

Parameter	Units	Reporting Limit	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10	Event 11	Event 12	Event 13	Event 14	n	Range			Standard Deviation	CV	
			11/12/01 to 11/13/01	11/24/01 to 11/25/01	11/29/01	12/03/01	12/20/01 to 12/21/01	1/27/02 to 1/28/02	3/06/02 to 3/07/02	3/17/02 to 3/18/02	11/8/02 to 11/9/02	12/16/02 to 12/17/02	12/20/02	2/24/03 to 2/25/03	3/15/03 to 3/16/03	4/14/03 to 4/15/03		Min <sup>1</sup>	Max	Mean			Median
Conventionals																							
Dissolved Organic Carbon	mg/L	1.0	56	25	28	26	19.7	13.3	35.3	26.7	37.5	41	21.6	21.8	16.3	22.9	14	13.3	56.0	27.9	25.5	11.7	0.418
Conductivity	µmhos/cm	1.0	225	119	103	99	97	80	120	81	108.9	26	22	84	84.2	109	14	22	225	97	98	51	0.521
Total Hardness	mg/L	2	65	40	73	76	52	2	40	21	48	36	48	46	30	40	14	2	76	44.1	43.0	20.1	0.457
pH	pH units	0.1	7.3	7.6	7.3	7.2	7.1	6.9	6.8	6.3	7	7	6.7	6.8	6.6	6.9	14	6.3	7.6	7.0	7.0	0.337	0.048
Total Dissolved Solids	mg/L	1	160	1	18	82	84	36	92	124	87	52	68	78	40	106	14	18	160	75	80.0	41.6	0.558
Total Organic Carbon	mg/L	1.0	56.1	26.6	30.5	27.5	22.2	13.6	37.7	27.9	38	43.7	22.6	24.9	18.5	27.8	14	13.6	56.1	29.8	27.7	11.3	0.380
Total Suspended Solids	mg/L	1	119	81	25	5	62	35	18	31	19	16	13	44	23	16	14	5	119	36.2	24.0	33.1	0.915
SVOCs																							
PAHs <sup>2</sup>	µg/L	0.05	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	0.05U	14	NA	NA	NA	NA	NA	NA
Hydrocarbons																							
Oil & Grease	mg/L	5.0	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U	14	NA	NA	NA	NA	NA	NA
Total Metals																							
Arsenic	µg/L	1.0	3.3	2.8	2	2	2	2.2	1.5	1.8	2.9	2.8	10	2.2	2.2	1.8	14	1.5	10	2.82	2.2	2.70	0.958
Cadmium	µg/L	0.2	0.2	2.2	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	14	0.2	2.2	NA	NA	NA	NA
Chromium	µg/L	1.0	4.5	4.6	2.3	2.2	3	3.1	2.6	1.7	1.7	1.6	1U	2.2	1.4	1.9	14	1.4	4.6	2.41	2.2	1.11	0.463
Copper	µg/L	1.0	29	15	11	9.2	9.5	10	16	11	21	12	8	7.7	5.4	10	14	5.4	29	12.5	10.5	6.5	0.523
Nickel	µg/L	2.0	7.4	4.5	2.9	2.8	2.8	3	3.6	2.6	4.6	2.3	2U	2	2U	2.2	14	2	7.4	3.10	2.8	1.69	0.545
Lead	µg/L	1.0	7.1	4.6	1.8	1.4	3.4	3.3	3	2.6	1.9	2.3	1	1.4	1U	1.3	14	1.0	7.1	2.55	2.1	1.81	0.711
Zinc	µg/L	5.0	150	94	40	30	59	70	190	70	140	62	42	37	29	57	14	29	190	76	60.5	51	0.668
Dissolved Metals																							
Arsenic	µg/L	1.0	2.8	2.3	1.9	1.9	1.5	1.7	1.4	1.6	2.8	2.4	9.8	2.2	2.1	1.4	14	1.4	9.8	2.56	2.0	2.75	1.074
Cadmium	µg/L	0.2	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	14	0.2	0.2	NA	NA	NA	NA
Chromium	µg/L	1.0	1.9	1.7	2	1.8	1.2	1.0U	1.7	1.0U	1.1	1.6	1.0U	1.5	1.3	1.8	14	1.1	2	1.47	1.55	0.36	0.247
Copper	µg/L	1.0	21	11	10	8.8	6.4	6.4	15	9.1	19	11	7.7	7.5	5.0	8.7	14	5	21	10.5	8.95	4.88	0.466
Nickel	µg/L	2.0	5.5	2.8	2.8	2.8	2.0U	2.0U	3.2	2.3	4.1	2.2	2U	2	2U	2	14	2	5.5	2.49	2.25	1.27	0.509
Lead	µg/L	1.0	1.0U	1.0U	1.6	1.0U	1.0U	1.0U	3	1.0U	1.0U	1.6	1.0U	1.0U	1.0U	1.0U	14	1.6	3	NA	NA	NA	NA
Zinc	µg/L	5.0	90	37	37	28	22	22	79	70	130	59	36	37	25	55	14	22	130	51.93	37	32.5	0.625
Nutrients																							
Ammonia	mg/L	0.10	0.56	0.59	0.39	0.29	0.26	0.2	0.46	0.10U	0.36	0.41	0.10U	0.29	0.10U	0.3	14	0.20	0.59	0.33	0.30	0.14	0.437
Nitrite as N	mg/L	0.10	0.10U	0.10U	0.15	0.10U	0.10U	0.10U	0.10U	0.10U	0.11	0.10U	0.10U	0.10U	0.10U	0.10U	14	0.11	0.15	NA	NA	NA	NA
Nitrate as N	mg/L	0.10	8.93	1.23	1.65	1.32	0.99	0.97	1.06	0.14	1.34	1.59	0.52	0.28	0.11	0.32	14	0.11	8.93	1.46	1.03	2.81	1.925
Ortho-P	mg/L	0.03	0.29	0.03U	0.18	0.15	0.15	0.15	0.09	0.18	0.15	0.21	0.09	0.35	0.17	0.13	14	0.09	0.35	0.17	0.15	0.08	0.474
Phosphorus (Dissolved)	mg/L	0.03	0.3	0.14	0.05	0.05	0.19	0.34	0.09	0.26	0.12	0.27	0.2	0.34	0.23	0.03U	14	0.05	0.34	0.19	0.20	0.11	0.586
Phosphorus (Total)	mg/L	0.03	0.44	0.29	0.3	0.23	0.29	0.39	0.11	0.3	0.18	0.31	0.25	0.37	0.31	0.03U	14	0.11	0.44	0.28	0.30	0.10	0.354
TKN	mg/L	0.10	4.24	1.83	1.42	0.96	3.2	0.57	0.8	0.10U	2.51	1.2	1.01	1.83	0.76	1.92	14	0.57	4.24	1.61	1.31	1.13	0.703
Total Nitrogen <sup>3</sup>	mg/L	0.10	13.27	3.16	3.22	2.38	4.29	1.64	1.96	0.34	3.96	2.89	1.63	2.21	0.97	2.34	14	0.34	13.27	3.16	2.36	3.71	1.174
Microbiological																							
Fecal Coliform	MPN/100 mL	2	11000	3000	5000	30000	1300	400	2300	500	22000	1100	1600	1300	500	2300	14	400	30000	5879	1950	9638	1.639
Total Coliform	MPN/100 mL	2	160000	24000	30000	30000	6000	24000	160000	900	22000	160000	1600	5000	2200	5000	14	900	160000	45050	23000	64607	1.434

"CV" Coefficient of variation is the standard deviation divided by the mean, usually multiplied by 100 to give a percentage.

"J" Indicates that the associated value is an estimated quantity.

"NA" Indicates summary statistics could not be run due to the number of non-detect values.

"NC" Not Collected

"TKN" Total Kjeldahl Nitrogen

<sup>1</sup>Minimum Detected Value

Benzo(ghi)Perylene, Benzo(k)Fluoranthene, Chrysene, Dibenzo(a,h)Anthracene, Fluoranthene, Fluorene, Indeno(1,2,3-c,d)Pyrene, Naphthalene, Phenanthrene, and Pyrene.

<sup>3</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"U" Indicates that analyte was not detected (non-detect, ND) at the associated value.

"UJ" Indicates that the material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

"n" Number of samples used in the statistics calculations.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)



**Table 29 Summary Statistics for Storm Water Runoff Quality<sup>1</sup>**

	Units	n	Percent Detection	Range		Mean	Median	Standard Deviation	CV
				Min	Max				
<b>Conventionals</b>									
Dissolved Organic Carbon	mg/L	81	100%	4.0	72.9	25.3	22.3	14.1	0.558
Conductivity	µmhos/cm	81	100%	12	485	126	98	93	0.732
Total Hardness	mg/L	81	99%	2	266	49.8	34.0	46.2	0.928
pH	pH units	81	100%	6.2	8.2	6.97	6.9	0.369	0.053
Total Dissolved Solids	mg/L	81	94%	2	362	100	80.0	74.3	0.742
Total Organic Carbon	mg/L	81	100%	4.4	78.5	27.2	24.2	14.8	0.545
Total Suspended Solids	mg/L	81	99%	2	409	84.3	62.0	83.8	0.994
<b>SVOCs</b>									
Acenaphthene	µg/L	81	1%	0.25	0.25	NA	NA	NA	NA
Benzo(b)Fluoranthene	µg/L	81	1%	0.05	0.05	NA	NA	NA	NA
Benzo(ghi)Perylene	µg/L	81	6%	0.05	0.17	NA	NA	NA	NA
Fluoranthene	µg/L	81	4%	0.06	0.1	NA	NA	NA	NA
Fluorene	µg/L	81	1%	0.06	0.06	NA	NA	NA	NA
Phenanthrene	µg/L	81	4%	0.05	0.14	NA	NA	NA	NA
Pyrene	µg/L	81	10%	0.06	0.13	NA	NA	NA	NA
Additional PAHs	µg/L	81	0%	NA	NA	NA	NA	NA	NA
<b>Hydrocarbons</b>									
Oil & Grease	mg/L	75	19%	5	13	NA	NA	NA	NA
<b>Total Metals</b>									
Arsenic	µg/L	81	89%	1.0	7.7	1.90	1.6	1.14	0.600
Cadmium	µg/L	81	84%	0.2	3.5	0.59	0.3	0.689	1.16
Chromium	µg/L	81	99%	1.2	21	5.56	4.2	4.23	0.761
Copper	µg/L	81	100%	5.5	89	22.0	20	14.2	0.647
Nickel	µg/L	81	95%	2	24	7.94	5.9	5.54	0.698
Lead	µg/L	81	91%	1.0	22	4.59	3.9	3.48	0.759
Zinc	µg/L	81	100%	22	1100	203	140	208	1.022
<b>Dissolved Metals</b>									
Arsenic	µg/L	81	68%	1.0	4.2	1.26	1.1	0.642	0.510
Cadmium	µg/L	81	52%	0.2	2.0	0.27	-0.2	0.37	1.35
Chromium	µg/L	81	88%	1.0	12	2.22	1.7	1.84	0.828
Copper	µg/L	81	100%	1.6	56	13.5	11	8.86	0.657
Nickel	µg/L	81	89%	2	18	5.51	4.1	4.00	0.725
Lead	µg/L	81	33%	1.0	3.5	0.93	0.71	0.746	0.800
Zinc	µg/L	81	100%	13	710	106.52	69	115.7	1.086
<b>Nutrients</b>									
Ammonia	mg/L	81	93%	0.10	3.16	0.75	0.55	0.651	0.867
Nitrite as N	mg/L	81	19%	0.10	0.30	NA	NA	NA	NA
Nitrate as N	mg/L	81	96%	0.10	1.95	0.66	0.56	0.481	0.729
Ortho-P	mg/L	81	47%	0.03	0.35	0.06	0.032	0.079	1.27
Phosphorus (Dissolved)	mg/L	81	70%	0.03	0.39	0.13	0.1	0.110	0.871
Phosphorus (Total)	mg/L	81	95%	0.05	1.09	0.25	0.22	0.17	0.650
TKN	mg/L	81	100%	0.10	7.74	2.24	1.7	1.57	0.700
Total Nitrogen <sup>2</sup>	mg/L	81	100%	0.30	8.51	3.01	2.56	1.83	0.608
<b>Microbiological</b>									
Fecal Coliform	MPN/100 mL	74	99%	23	24000	2231	900	4091	1.83
Total Coliform	MPN/100 mL	74	100%	34	160000	17379	5000	33837	1.95

<sup>1</sup>Analytical results for highway runoff samples only (sites 12-210, 12-214, 12-215, 12-216, 12-220, and 12-221)

<sup>2</sup>Total Nitrogen is the sum of nitrite, nitrate, and TKN concentrations. For non-detect values, the reporting limit value was used.

"SVOCs" Semi-volatile Organic Compounds

"PAHs" Polycyclic Aromatic Hydrocarbons

"Ortho-P" Orthophosphate as P (dissolved)

"TKN" Total Kjeldahl Nitrogen

"nd" SVOCs were not detected in storm water samples collected during the 2001/2002 storm water season



**Table 30 T-Test Results for CSF System 506R**

Constituent	System Component	Number of Samples	Sample Mean Difference <sup>1</sup>	Sample Standard Deviation <sup>2</sup>	t-value <sup>3</sup>	Critical t-value <sup>4</sup>	Result <sup>5</sup>
		(n)	(mg/L or µg/L)	(mg/L or µg/L)			(Accept or Reject)
Nitrate	Basin	11	-0.20	0.35	-1.91	±2.23	Accept
	CSF Filter	11	-1.53	2.05	-2.47	±2.23	Reject
Total Kjeldahl Nitrogen	Basin	11	-0.79	1.93	-1.35	±2.23	Accept
	CSF Filter	11	0.86	2.11	1.35	±2.23	Accept
Ortho-Phosphate	Basin	11	-0.03	0.10	-1.14	±2.23	Accept
	CSF Filter	11	-0.05	0.12	-1.28	±2.23	Accept
Total Phosphorous	Basin	11	-0.01	0.16	-0.23	±2.23	Accept
	CSF Filter	11	-0.03	0.14	-0.59	±2.23	Accept
Total Suspended Solids	Basin	11	23.91	60.54	1.31	±2.23	Accept
	CSF Filter	11	16.09	55.91	0.95	±2.23	Accept
Total Copper	Basin	11	-1.98	6.79	-0.97	±2.23	Accept
	CSF Filter	11	3.63	9.90	1.22	±2.23	Accept
Dissolved Copper	Basin	11	-2.11	5.24	-1.33	±2.23	Accept
	CSF Filter	11	1.96	7.48	0.87	±2.23	Accept
Total Lead	Basin	11	0.01	0.94	0.03	±2.23	Accept
	CSF Filter	11	0.54	0.96	1.86	±2.23	Accept
Dissolved Lead	Basin	11	-0.16	0.93	-0.58	±2.23	Accept
	CSF Filter	11	0.26	0.87	1.00	±2.23	Accept
Total Zinc	Basin	11	-18.18	70.13	-0.86	±2.23	Accept
	CSF Filter	11	71.86	111.73	2.13	±2.23	Accept
Dissolved Zinc	Basin	11	-24.64	66.96	-1.22	±2.23	Accept
	CSF Filter	11	51.01	104.38	1.62	±2.23	Accept

- Differences for each sample were calculated as influent concentration minus effluent concentration.  
For basins the difference is calculated as highway runoff concentration minus basin effluent concentration.  
For filters the difference is calculated as basin effluent concentration minus filter effluent concentration.  
The sample mean difference is given in either mg/L for nutrients and conventionals or µg/L for metals.
- Sample standard deviation of the differences in mg/L or ug/L for the constituents listed in footnote 1.
- Value of the t-statistic calculated by:  $d/(s/\sqrt{n})$ , where d is the sample mean difference, s is the sample standard deviation of the differences, and n is the number of samples.
- Critical value of the t-statistic for a two-tailed test with 95% confidence.
- If the calculated t-value is less than the critical value, the null hypothesis (Ho: The two populations have the same mean, or the mean difference is not significantly different from zero) is accepted. Otherwise the null hypothesis is rejected.



**Table 31 T-Test Results for CSF System 604R**

Constituent	System Component	Number of Samples	Sample Mean Difference <sup>1</sup> (mg/L or µg/L)	Sample Standard Deviation <sup>2</sup> (mg/L or µg/L)	t-value <sup>3</sup>	Critical t-value <sup>4</sup>	Result <sup>5</sup> (Accept or Reject)
		(n)					
Nitrate	Basin	10	0.26	0.31	2.63	±2.26	Reject
	CSF Filter	10	-0.87	0.85	-3.26	±2.26	Reject
Total Kjeldahl Nitrogen	Basin	10	0.27	0.76	1.11	±2.26	Accept
	CSF Filter	10	-0.01	0.61	-0.06	±2.26	Accept
Ortho-Phosphate	Basin	10	-0.15	0.42	-1.15	±2.26	Accept
	CSF Filter	10	0.01	0.30	0.15	±2.26	Accept
Total Phosphorous	Basin	10	0.05	0.05	3.15	±2.26	Reject
	CSF Filter	10	-0.05	0.09	-1.91	±2.26	Accept
Total Suspended Solids	Basin	10	21.63	35.61	1.92	±2.26	Accept
	CSF Filter	10	13.13	18.35	2.26	±2.26	Reject
Total Copper	Basin	10	4.45	4.57	3.08	±2.26	Reject
	CSF Filter	10	1.92	2.35	2.58	±2.26	Reject
Dissolved Copper	Basin	10	2.44	2.97	2.60	±2.26	Reject
	CSF Filter	10	0.17	1.36	0.39	±2.26	Accept
Total Lead	Basin	10	1.10	1.99	1.74	±2.26	Accept
	CSF Filter	10	0.82	1.90	1.36	±2.26	Accept
Dissolved Lead	Basin	10	0.09	0.12	2.38	±2.26	Reject
	CSF Filter	10	0.00	0.00	NA	±2.26	NA
Total Zinc	Basin	10	34.70	42.11	2.61	±2.26	Reject
	CSF Filter	10	19.47	8.17	7.54	±2.26	Reject
Dissolved Zinc	Basin	10	12.85	31.52	1.29	±2.26	Accept
	CSF Filter	10	10.59	7.21	4.64	±2.26	Reject

- Differences for each sample were calculated as influent concentration minus effluent concentration.  
For basins the difference is calculated as highway runoff concentration minus basin effluent concentration.  
For filters the difference is calculated as basin effluent concentration minus filter effluent concentration.  
The sample mean difference is given in either mg/L for nutrients and conventionals or µg/L for metals.
- Sample standard deviation of the differences in mg/L or ug/L for the constituents listed in footnote 1.
- Value of the t-statistic calculated by:  $d/(s/\sqrt{n})$ , where d is the sample mean difference, s is the sample standard deviation of the differences, and n is the number of samples.
- Critical value of the t-statistic for a two-tailed test with 95% confidence.
- If the calculated t-value is less than the critical value, the null hypothesis ( $H_0$ : The two populations have the same mean, or the mean difference is not significantly different from zero) is accepted. Otherwise the null hypothesis is rejected.



**Table 32 T-Test Results for CSF System 785L**

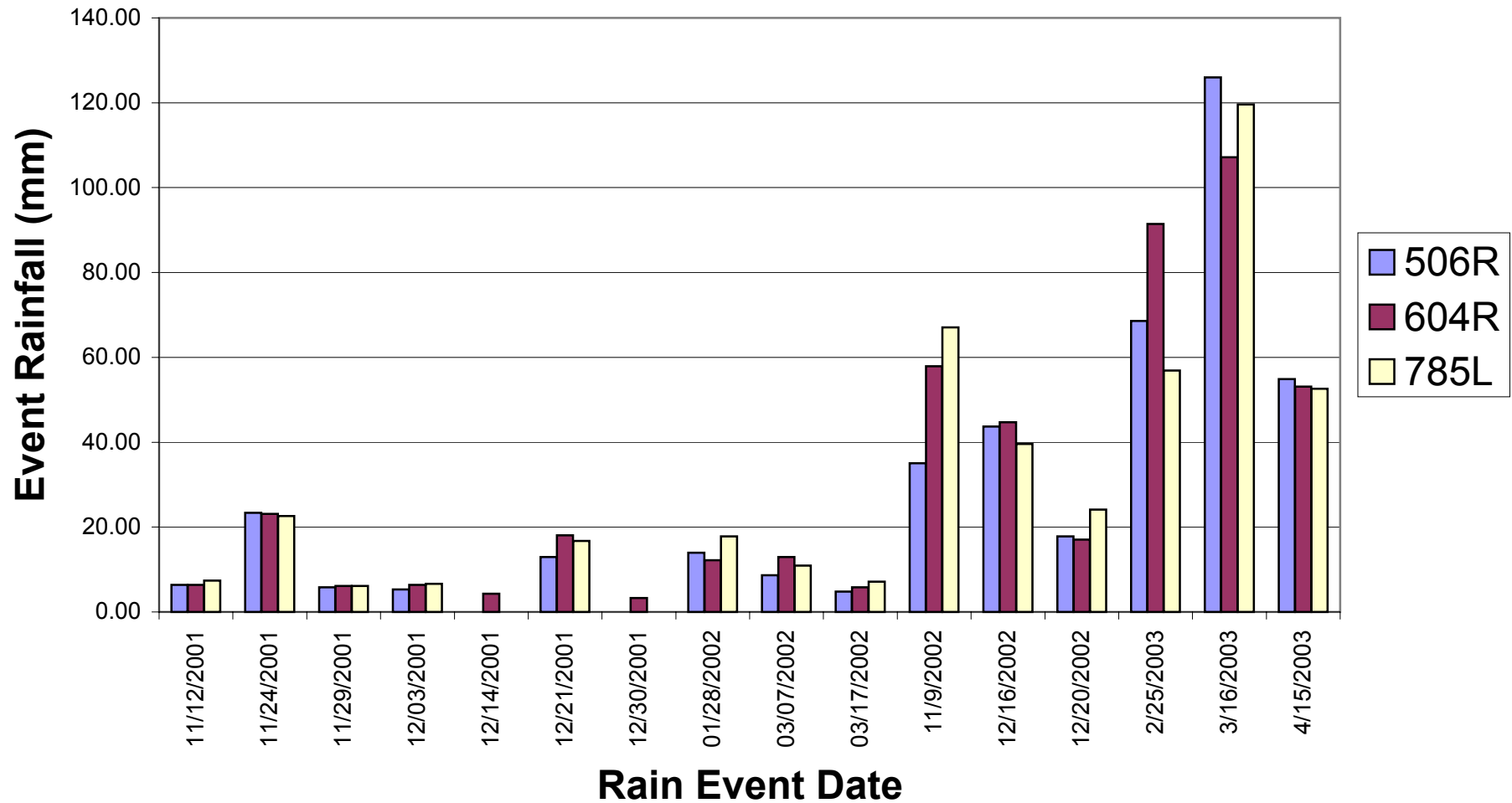
Constituent	System Component	Number of Samples	Sample Mean Difference <sup>1</sup> (mg/L or µg/L)	Sample Standard Deviation <sup>2</sup> (mg/L or µg/L)	t-value <sup>3</sup>	Critical t-value <sup>4</sup>	Result <sup>5</sup> (Accept or Reject)
		(n)					
Nitrate	Basin	11	0.05	0.08	2.00	±2.23	Accept
	CSF Filter	11	-0.52	0.39	-4.45	±2.23	Reject
Total Kjeldahl Nitrogen	Basin	11	0.43	1.38	1.03	±2.23	Accept
	CSF Filter	11	-0.19	0.46	-1.37	±2.23	Accept
Ortho-Phosphate	Basin	11	0.03	0.08	1.36	±2.23	Accept
	CSF Filter	11	-0.08	0.07	-4.05	±2.23	Reject
Total Phosphorous	Basin	11	0.07	0.13	1.70	±2.23	Accept
	CSF Filter	11	-0.07	0.07	-3.01	±2.23	Reject
Total Suspended Solids	Basin	11	4.03	36.17	0.37	±2.23	Accept
	CSF Filter	11	22.82	30.74	2.46	±2.23	Reject
Total Copper	Basin	11	5.98	8.09	2.45	±2.23	Reject
	CSF Filter	11	1.91	2.16	2.93	±2.23	Reject
Dissolved Copper	Basin	11	2.19	4.49	1.62	±2.23	Accept
	CSF Filter	11	0.43	1.57	0.91	±2.23	Accept
Total Lead	Basin	11	1.29	2.66	1.61	±2.23	Accept
	CSF Filter	11	0.85	1.44	1.97	±2.23	Accept
Dissolved Lead	Basin	11	0.16	0.54	1.00	±2.23	Accept
	CSF Filter	11	-0.14	0.62	-0.74	±2.23	Accept
Total Zinc	Basin	11	103.04	98.41	3.47	±2.23	Reject
	CSF Filter	11	53.27	47.40	3.73	±2.23	Reject
Dissolved Zinc	Basin	11	36.89	44.30	2.76	±2.23	Reject
	CSF Filter	11	34.82	21.81	5.30	±2.23	Reject

- Differences for each sample were calculated as influent concentration minus effluent concentration.  
For basins the difference is calculated as highway runoff concentration minus basin effluent concentration.  
For filters the difference is calculated as basin effluent concentration minus filter effluent concentration.  
The sample mean difference is given in either mg/L for nutrients and conventionals or µg/L for metals.
- Sample standard deviation of the differences in mg/L or ug/L for the constituents listed in footnote 1.
- Value of the t-statistic calculated by:  $d/(s/\sqrt{n})$ , where d is the sample mean difference, s is the sample standard deviation of the differences, and n is the number of samples.
- Critical value of the t-statistic for a two-tailed test with 95% confidence.
- If the calculated t-value is less than the critical value, the null hypothesis ( $H_0$ : The two populations have the same mean, or the mean difference is not significantly different from zero) is accepted. Otherwise the null hypothesis is rejected.

## FIGURES

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## Rainfall Totals



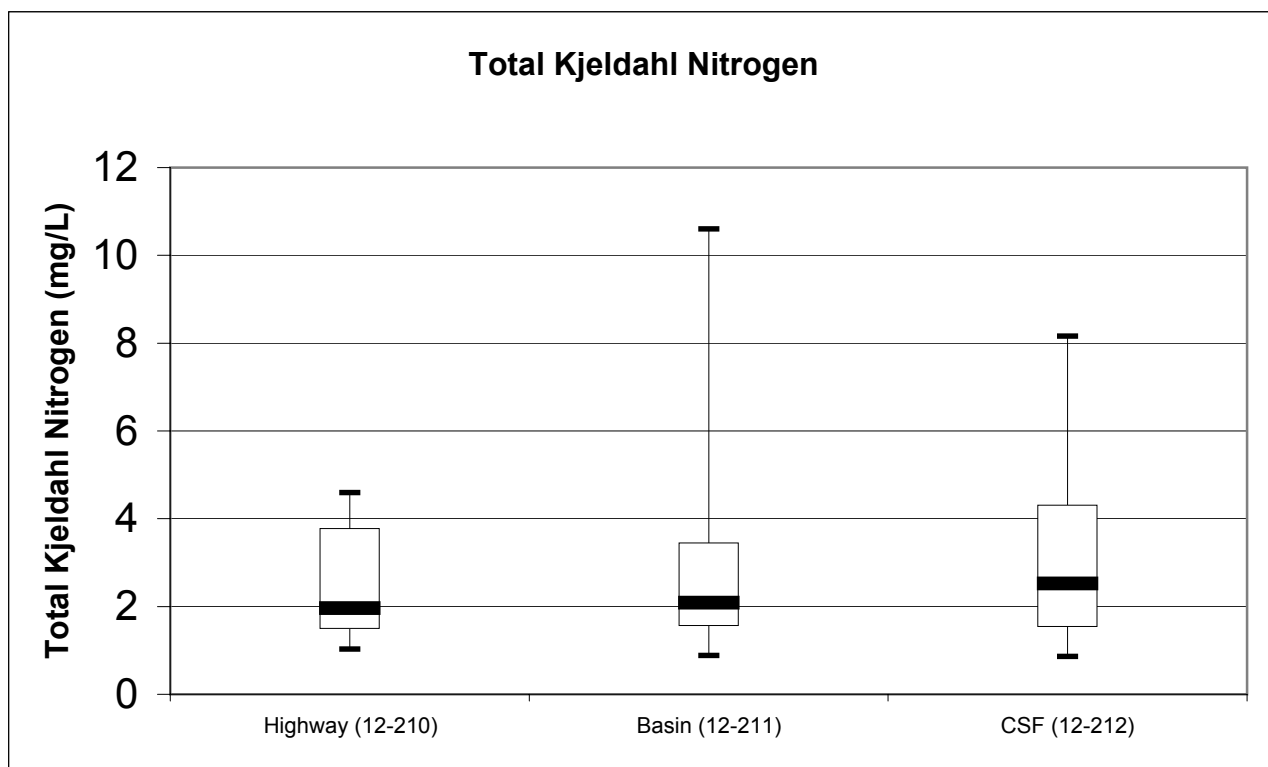
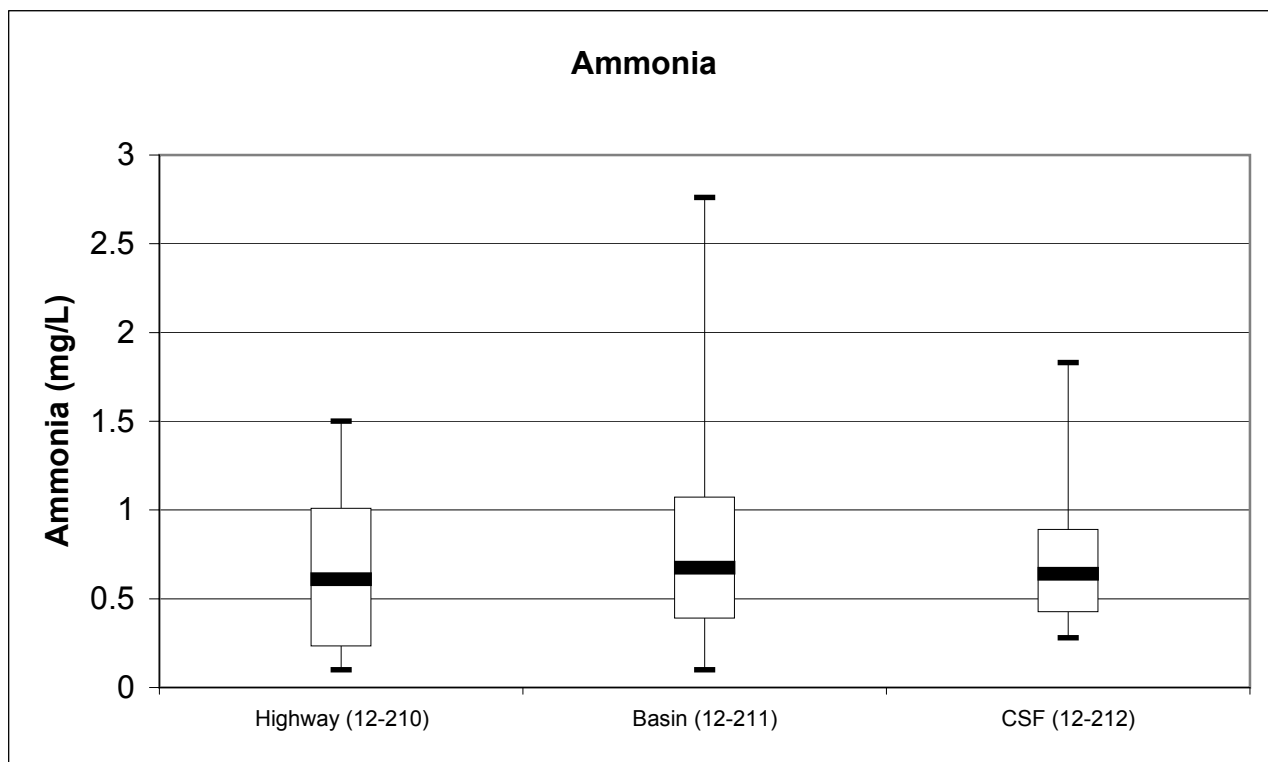
Compost Storm Water Filter System Monitoring Event Rain

CSF Systems 506R, 604R, and 785L  
Orange County, California

Date  
06/11/02

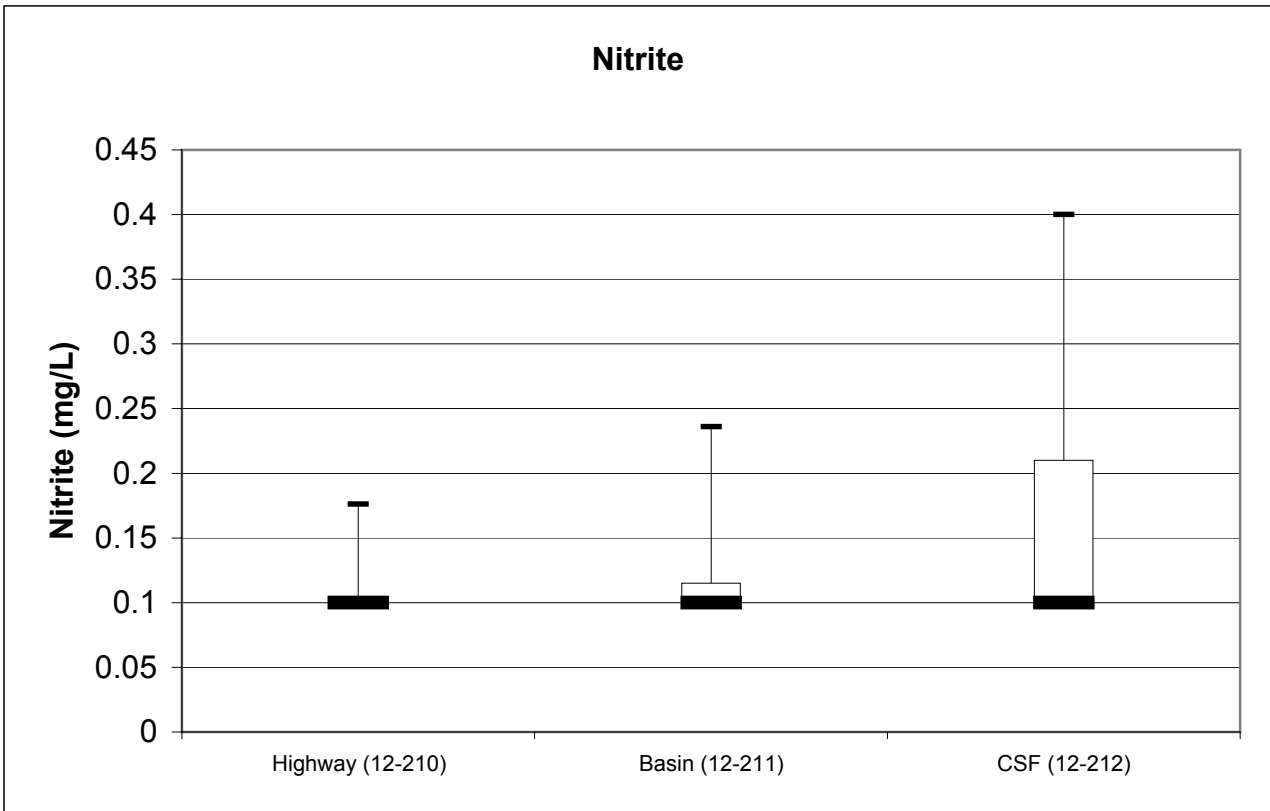
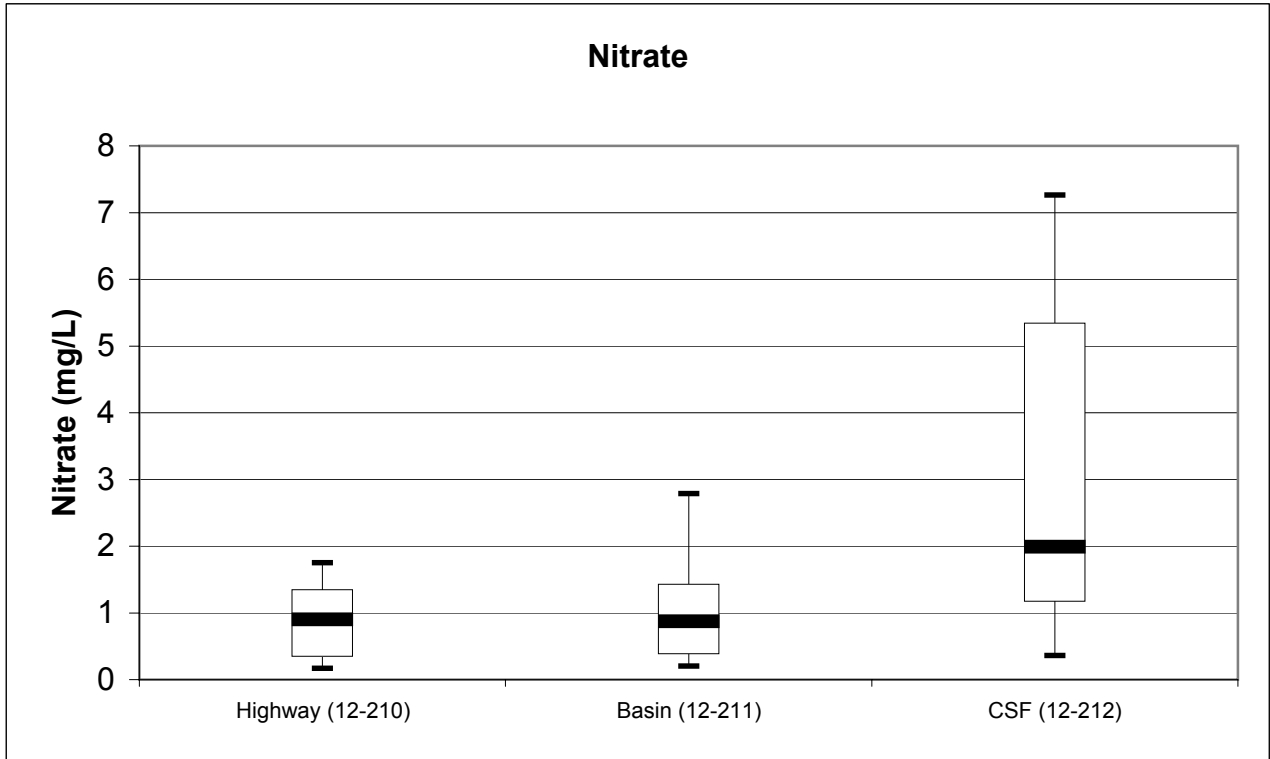
Figure No.

8



Distribution of Ammonia and Total Kjeldahl Nitrogen  
 CSF System 506R  
 Orange County, California

	Figure No.
Date 05/22/02	9

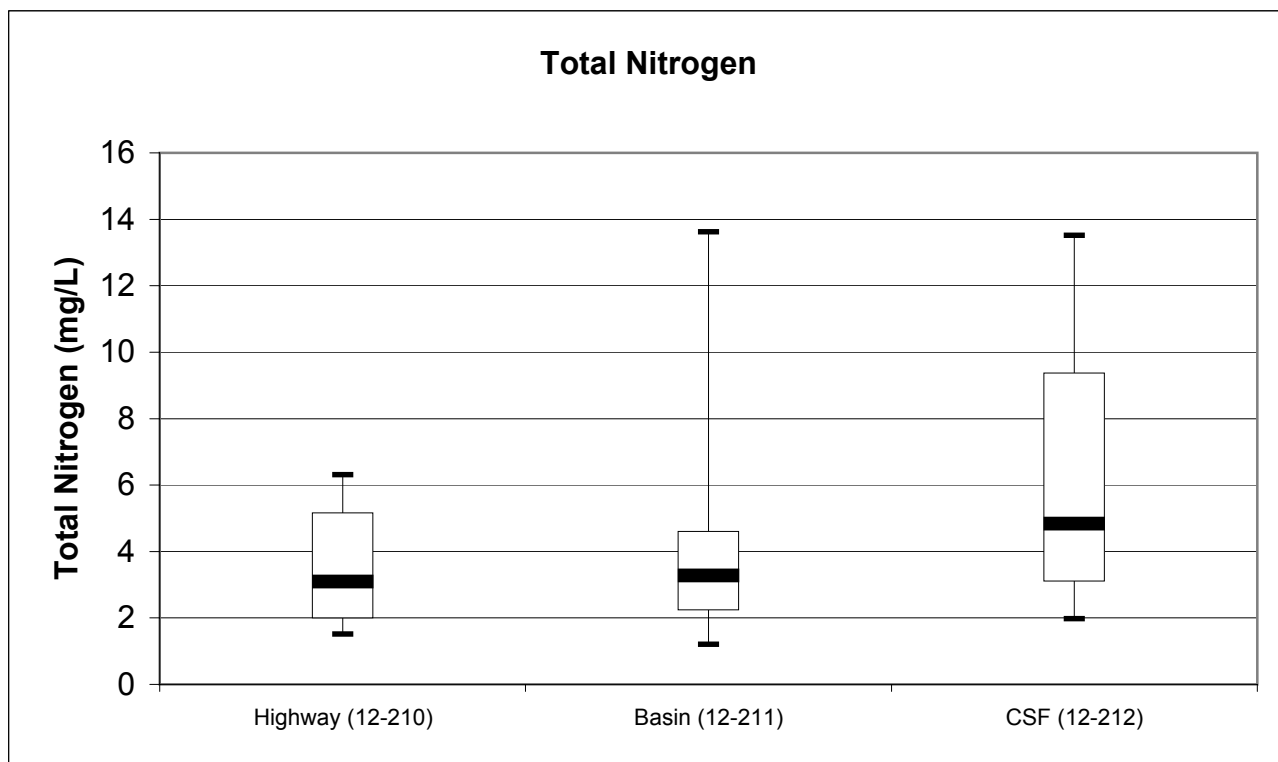


**Distribution of Nitrate and Nitrite**  
 CSF System 506R  
 Orange County, California

Date  
05/22/02

Figure No.

**10**

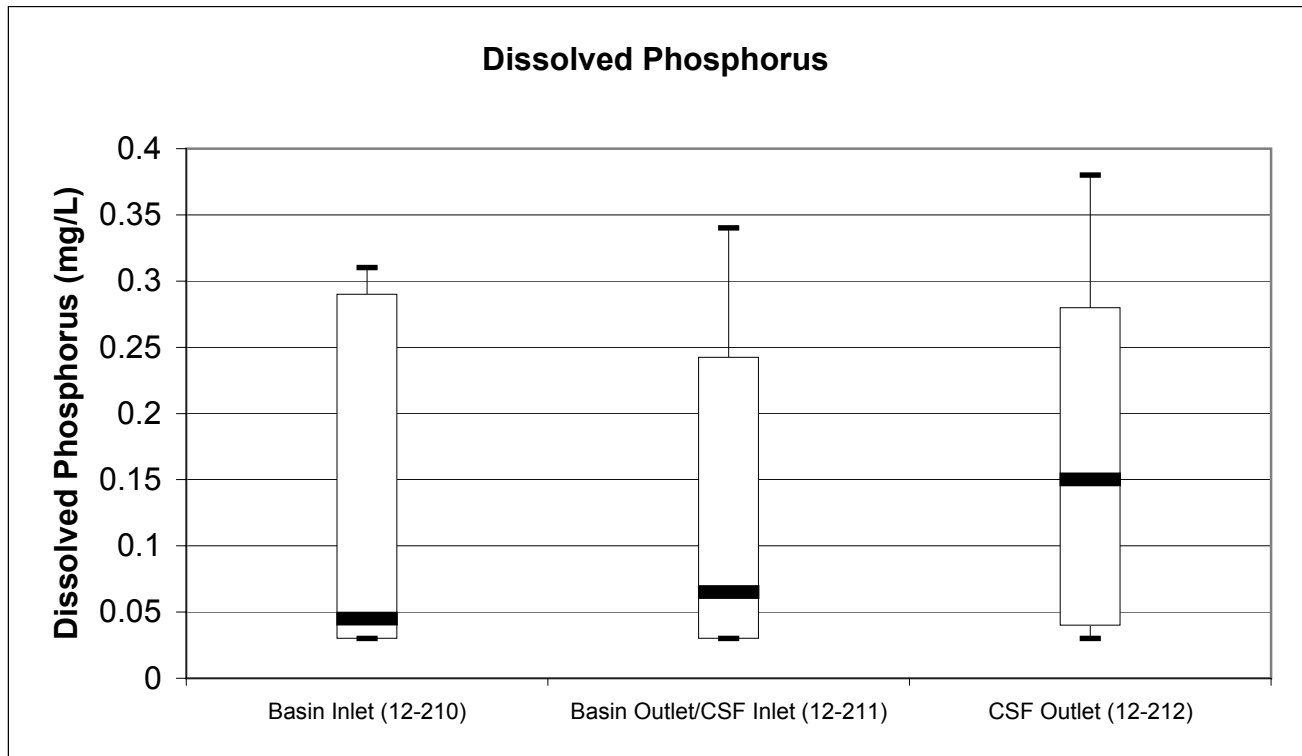
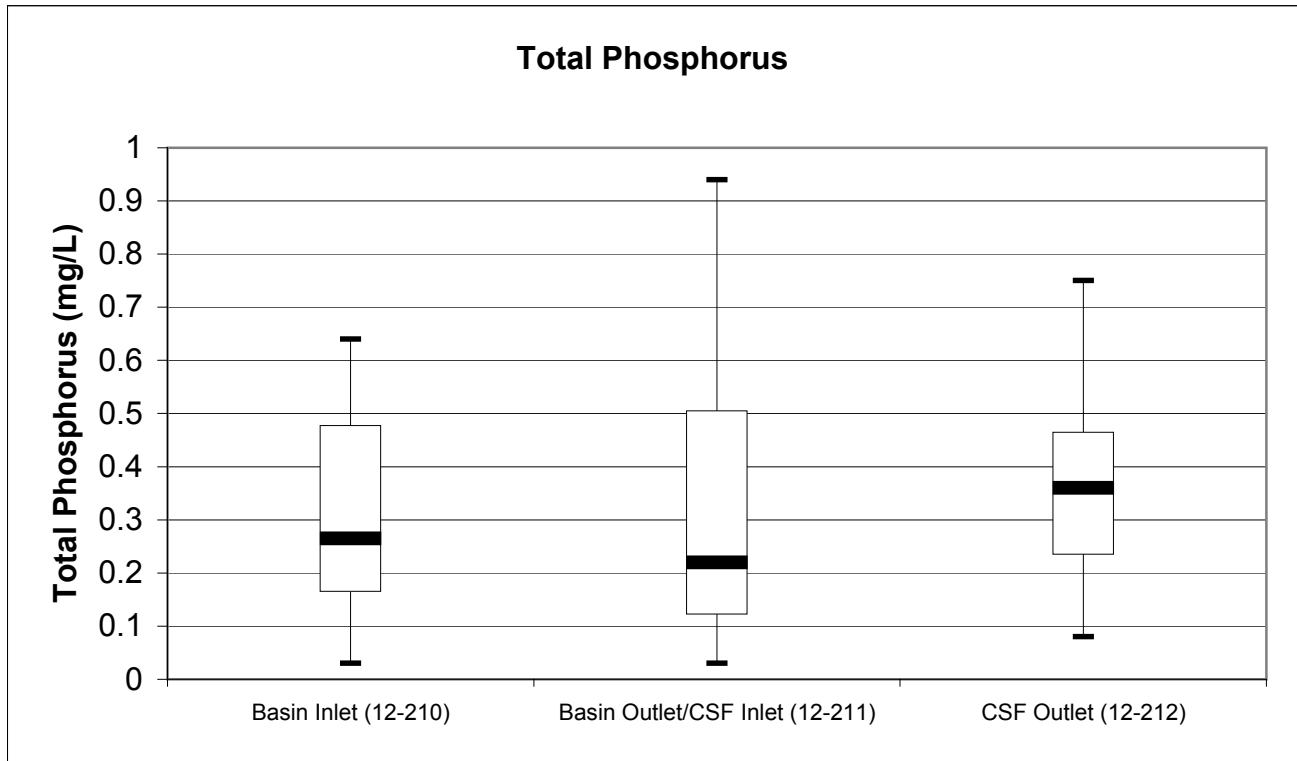


**Distribution of Total Nitrogen**  
 CSF System 506R  
 Orange County, California

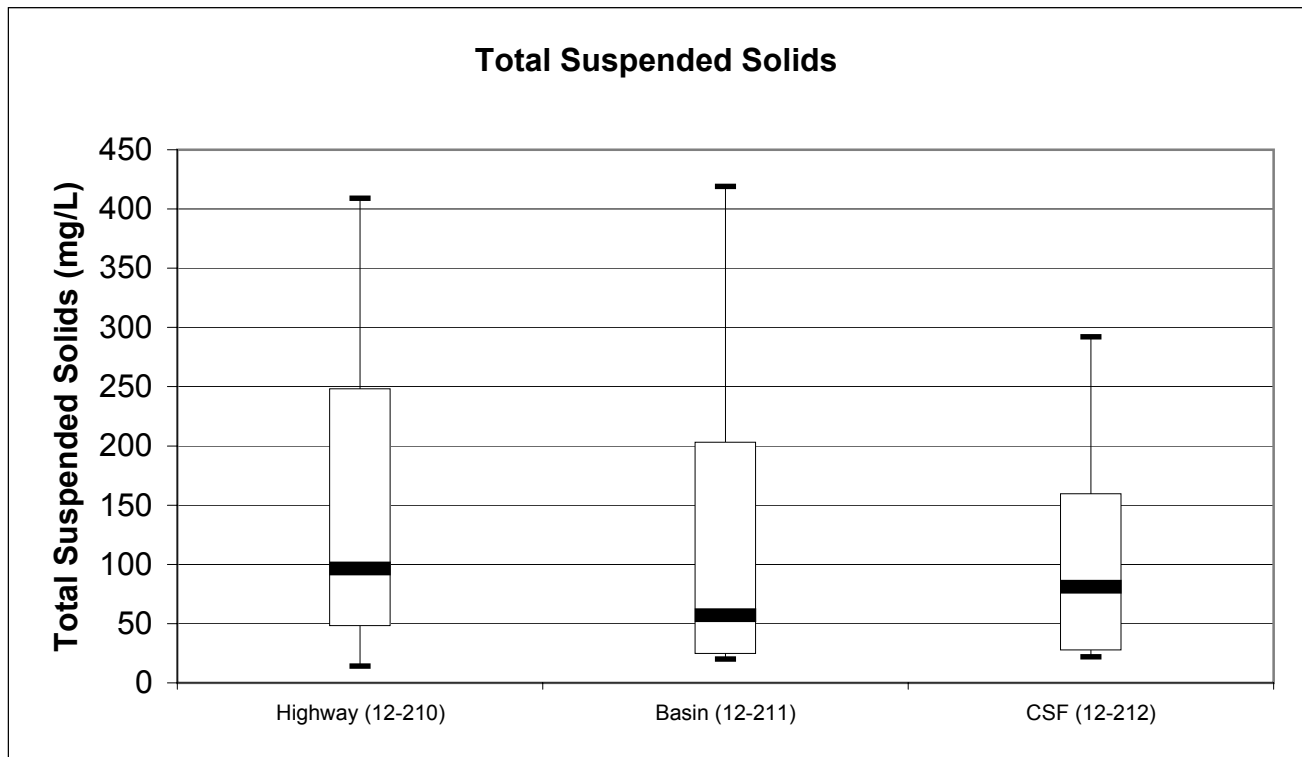
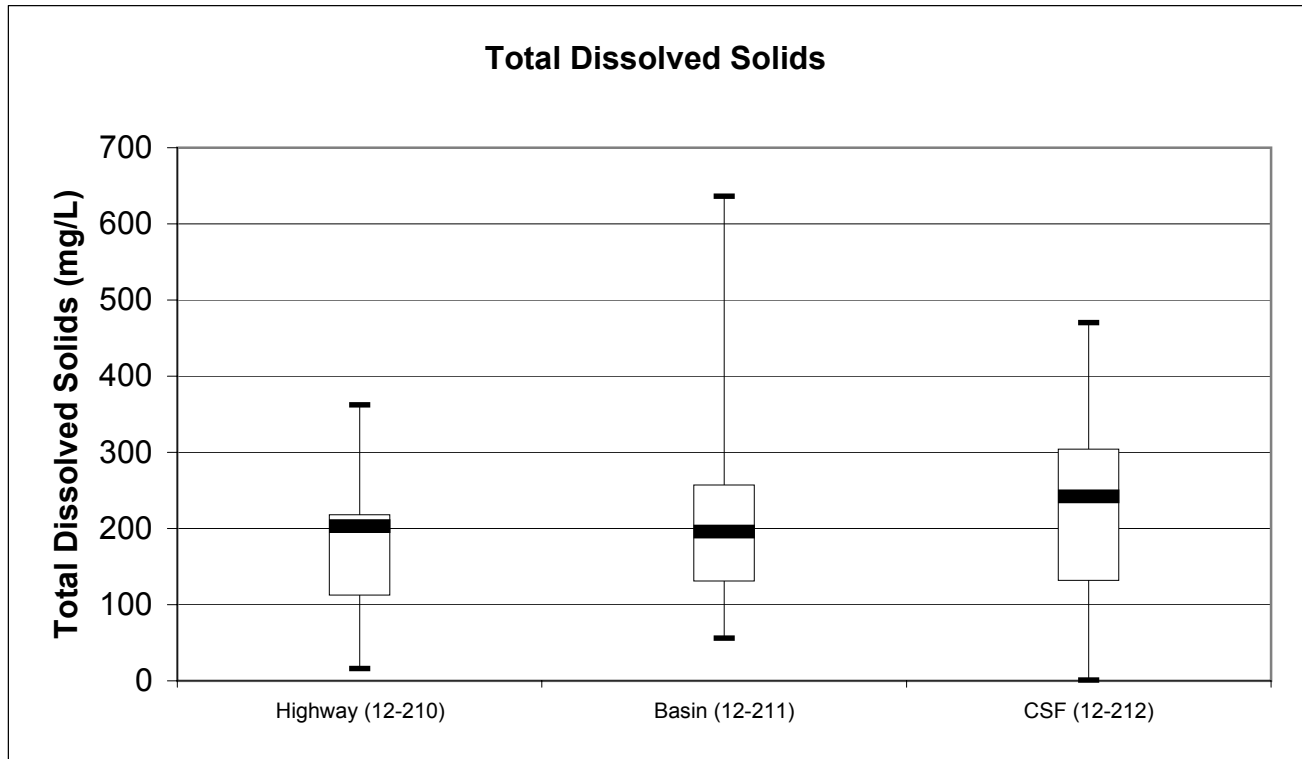
Date  
 05/22/02

Figure No.

**11**

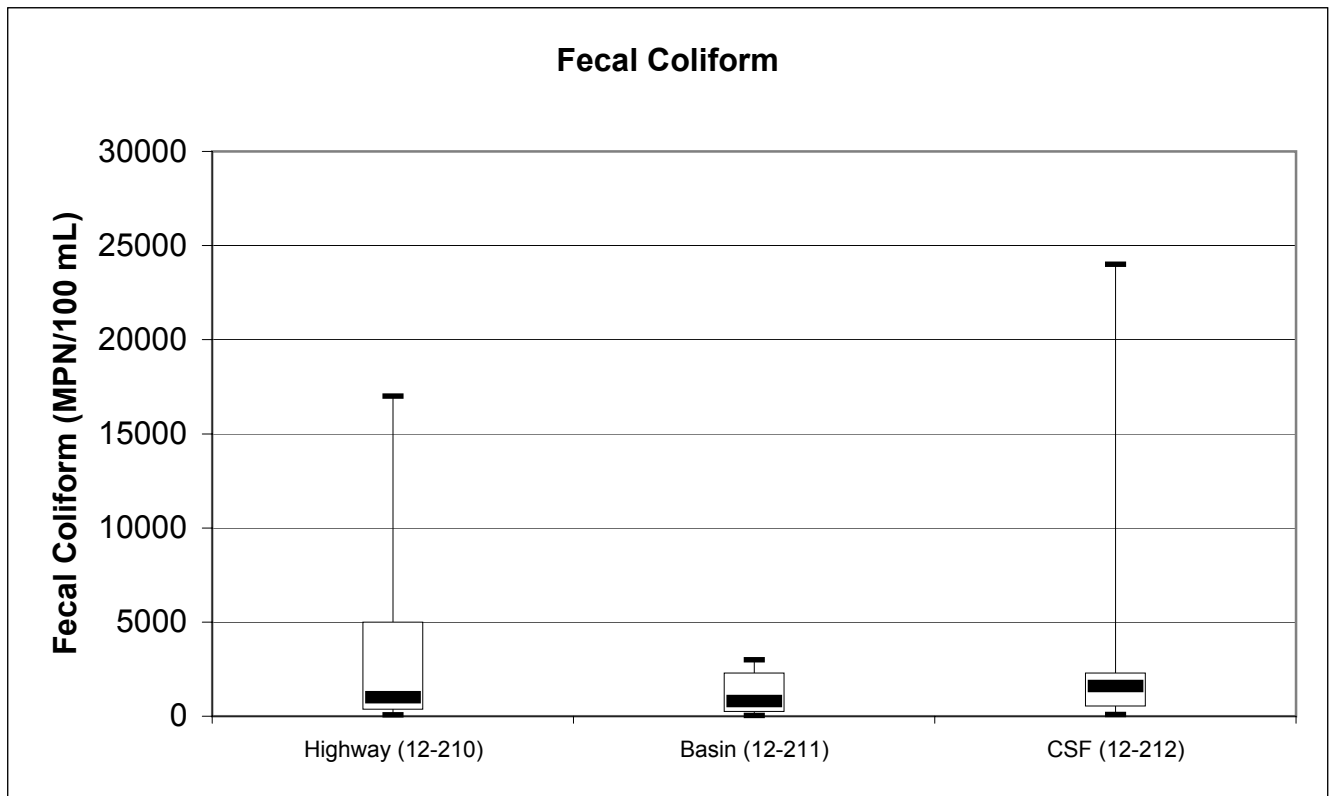
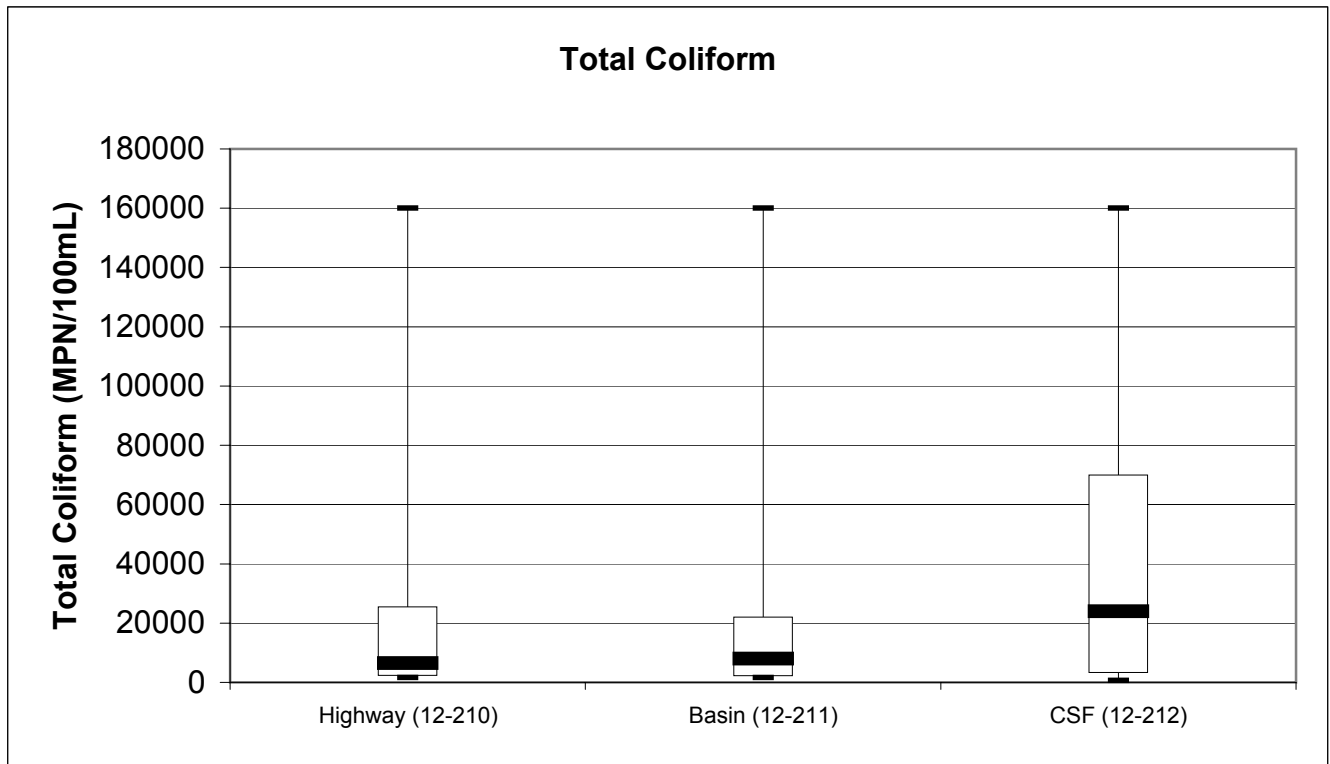


Distribution of Total and Dissolved Phosphorous  
CSF System 506R  
Orange County, California

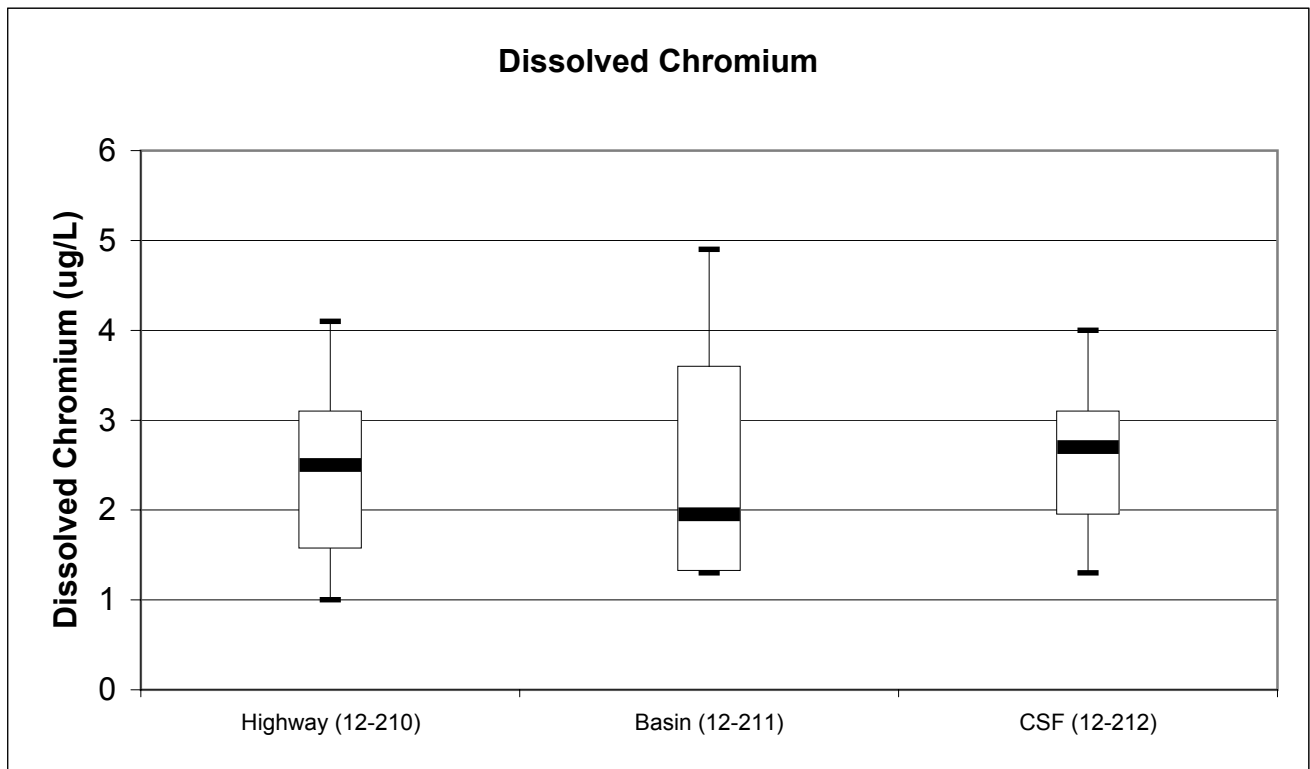
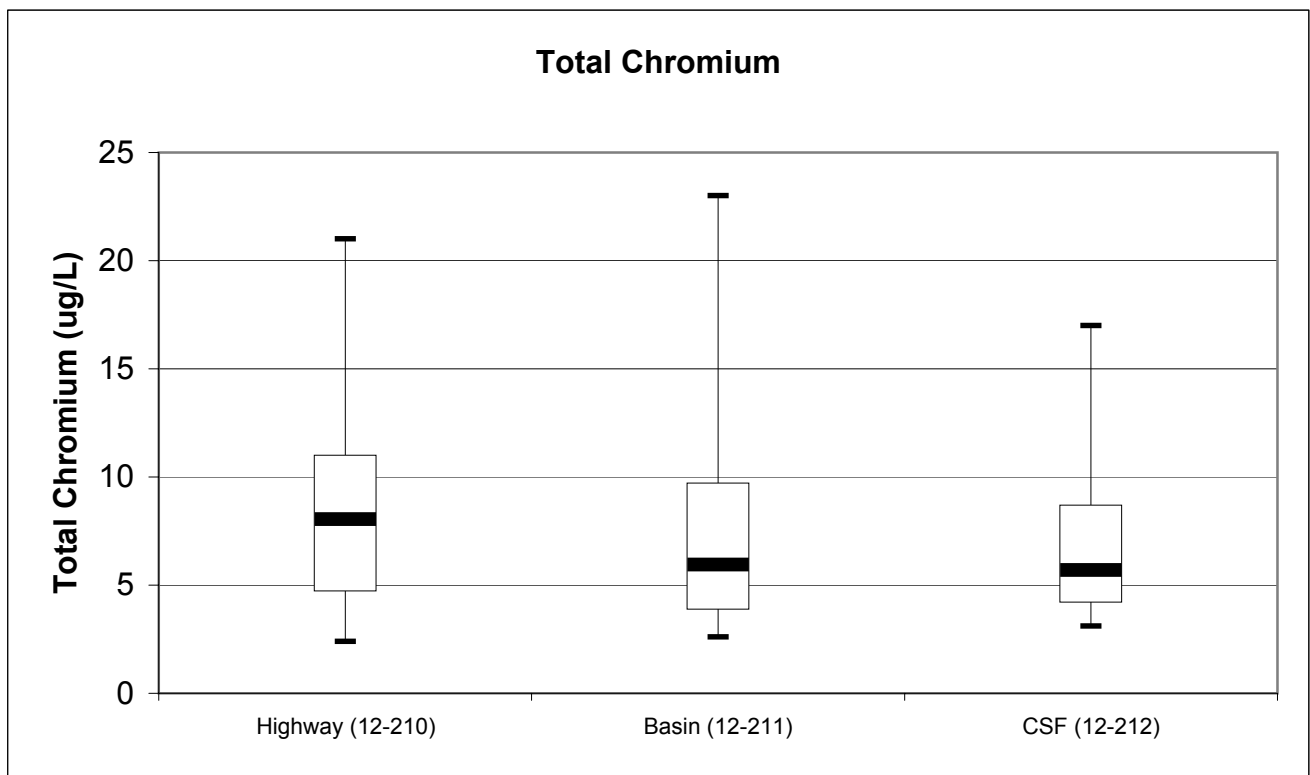


Distribution of Total Dissolved and Suspended Solids  
 CSF System 506R  
 Orange County, California

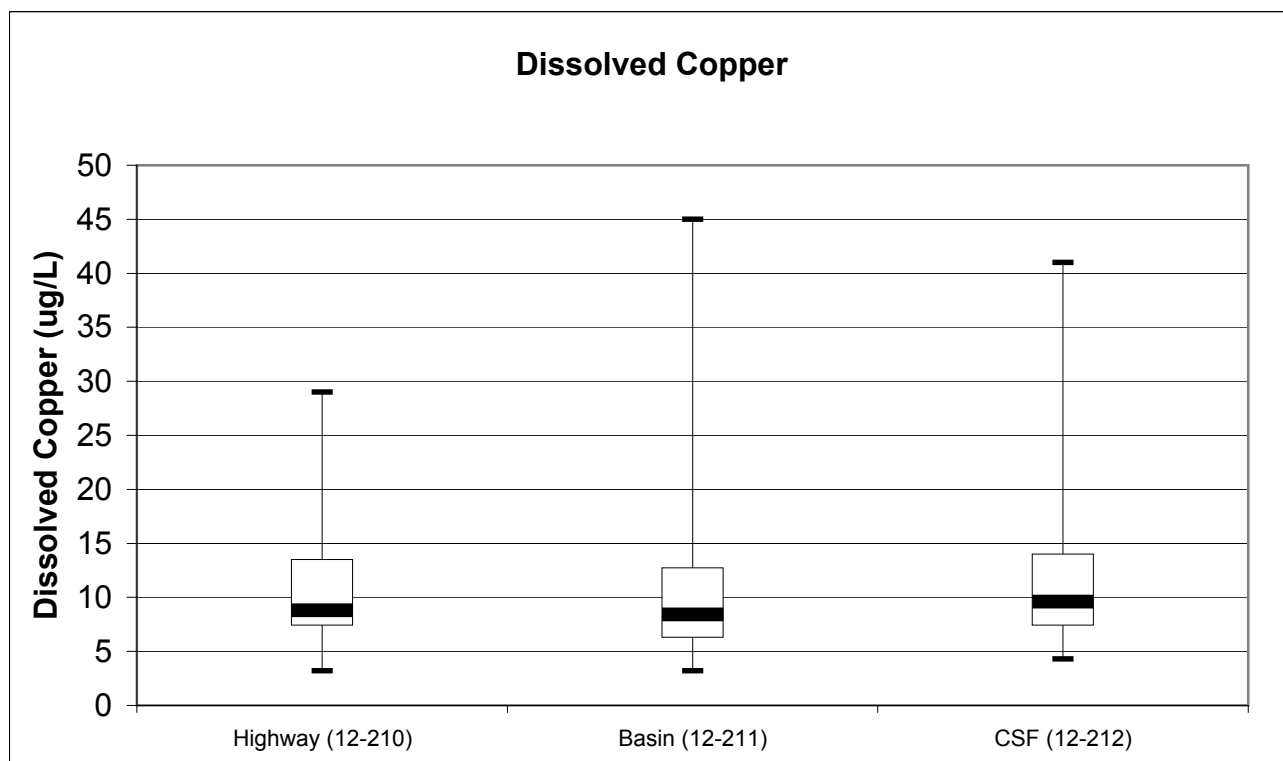
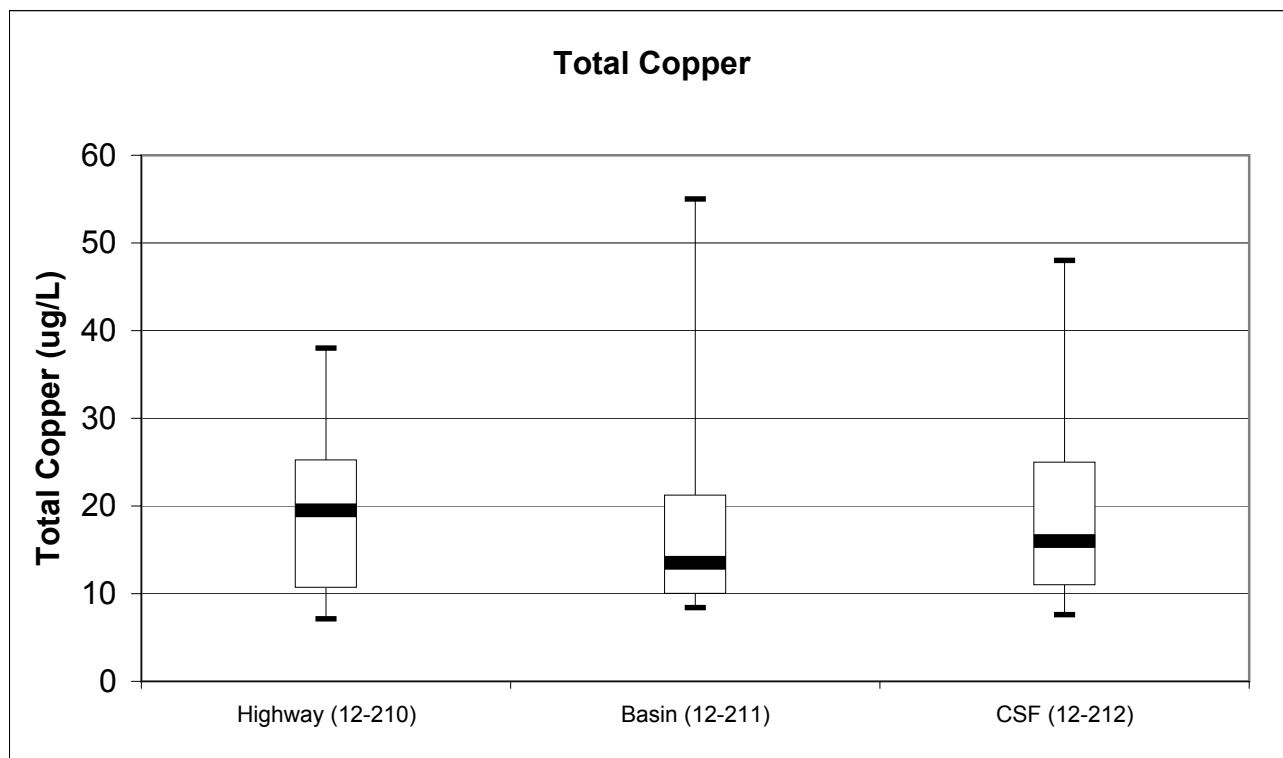
	Figure No.
Date 05/22/02	13



**Distribution of Total and Fecal Coliform**  
 CSF System 506R  
 Orange County, California



Distribution of Total and Dissolved Chromium  
CSF System 506R  
Orange County, California

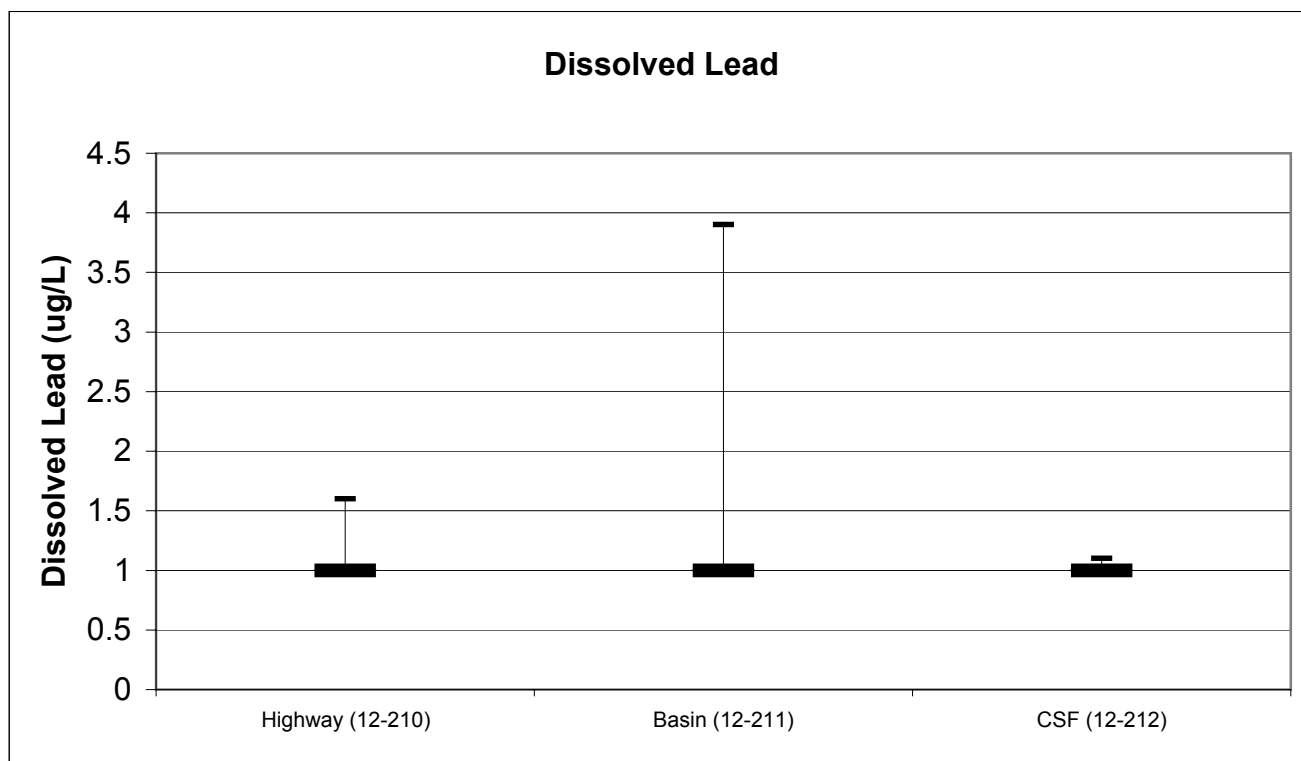
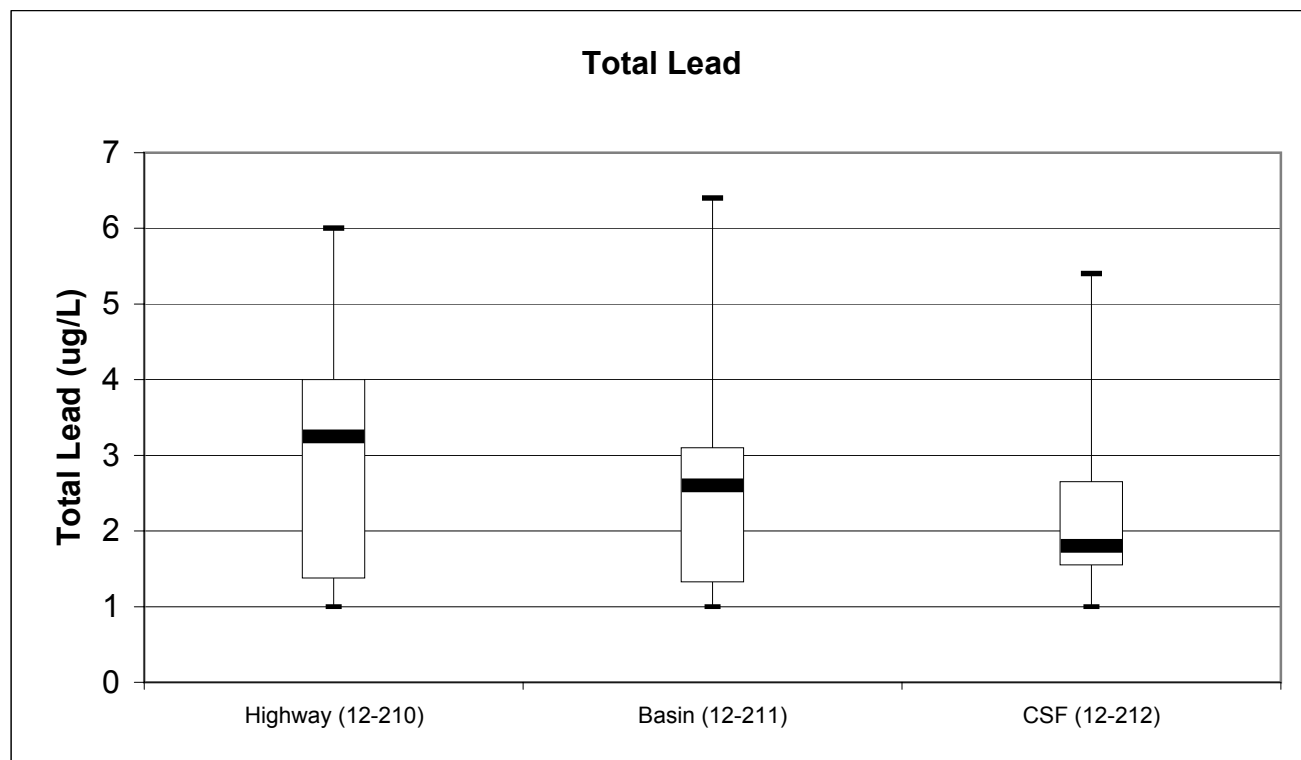


**Distribution of Total and Dissolved Copper**  
 CSF System 506R  
 Orange County, California

Date  
05/22/02

Figure No.

**16**

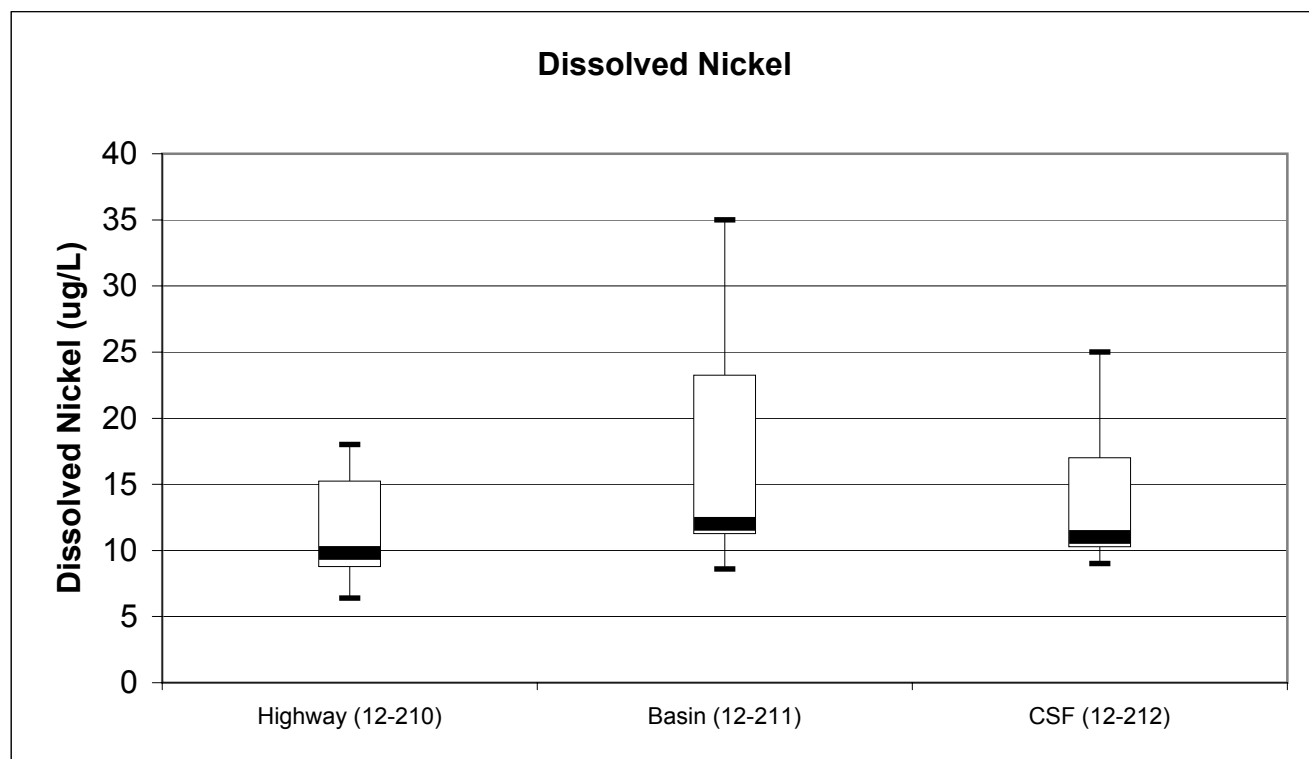
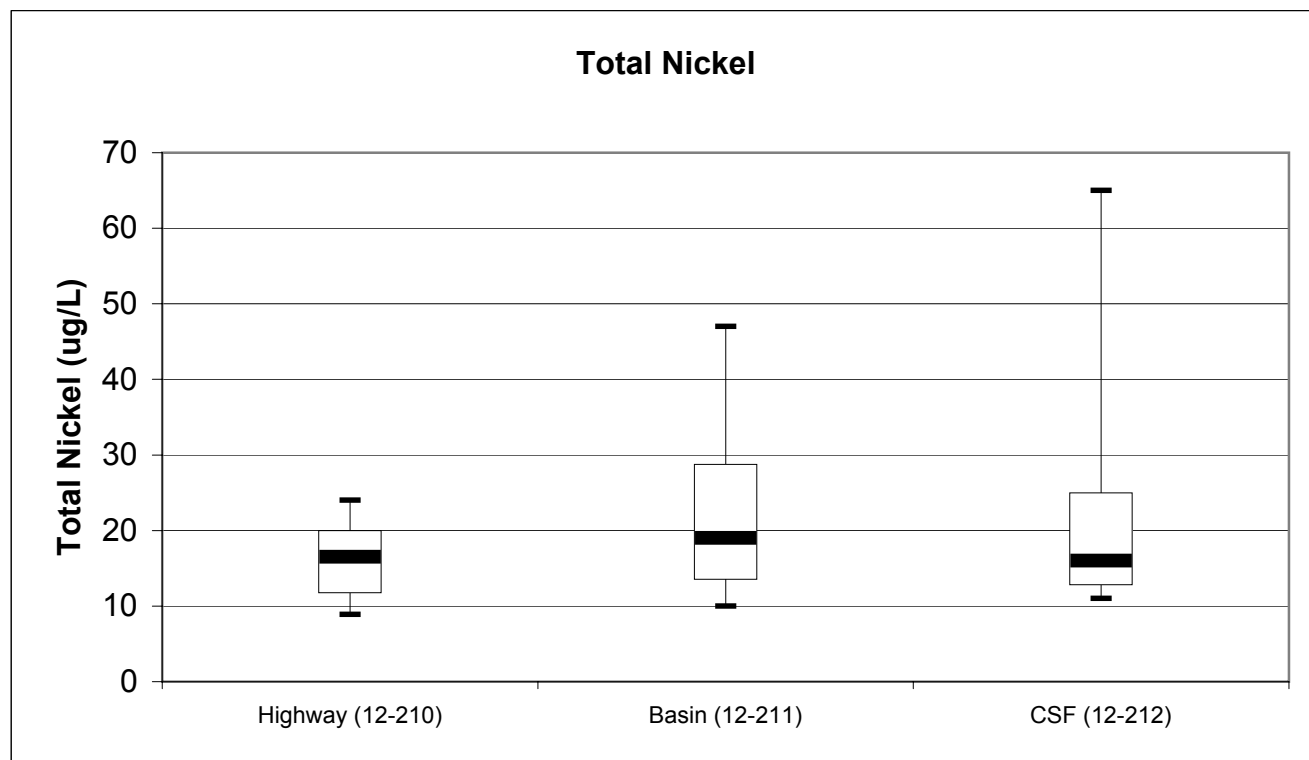


Distribution of Total and Dissolved Lead  
CSF System 506R  
Orange County, California

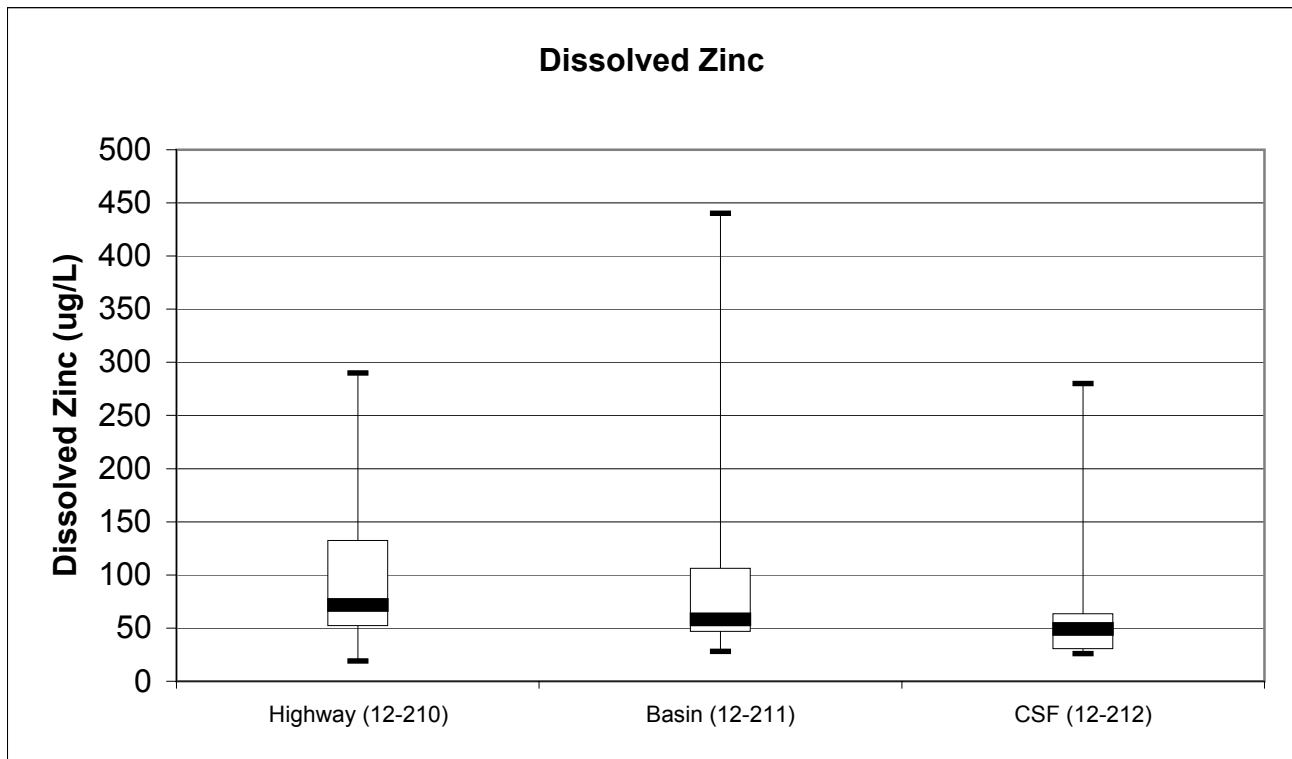
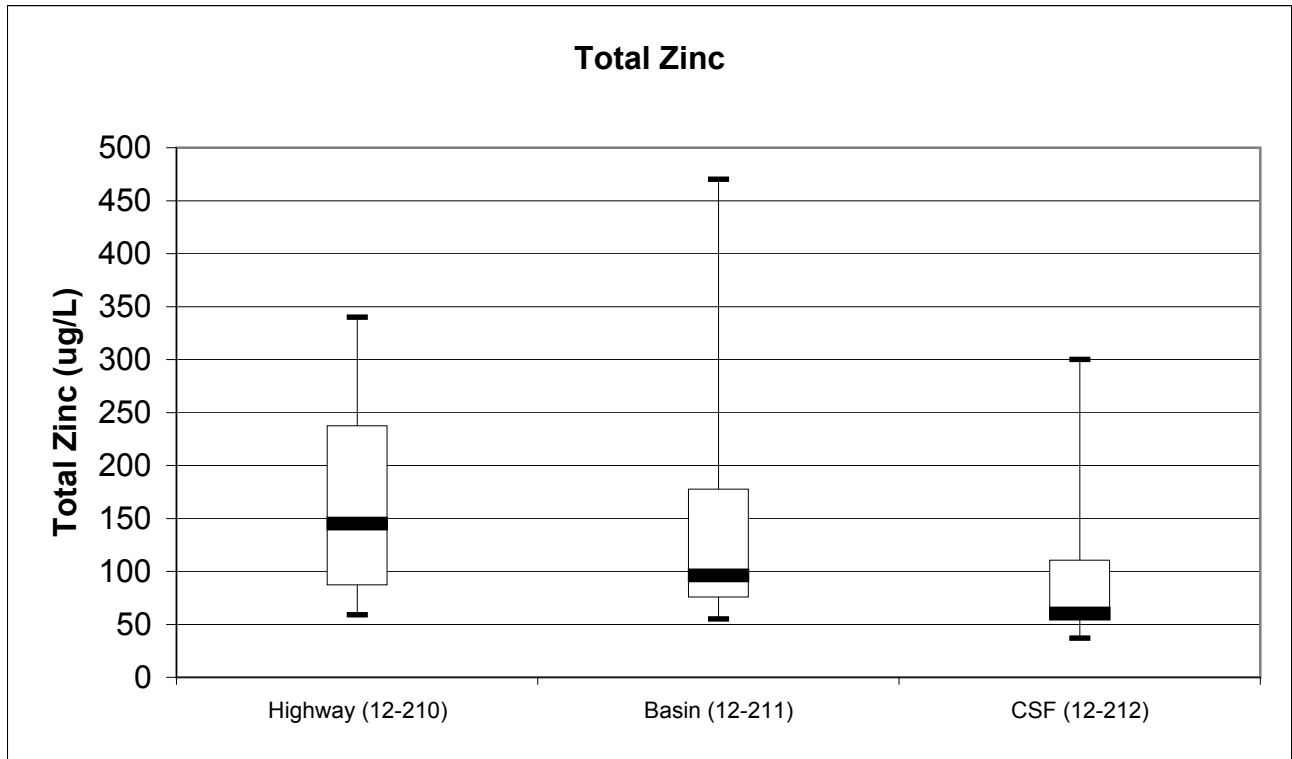
Date  
05/22/02

Figure No.

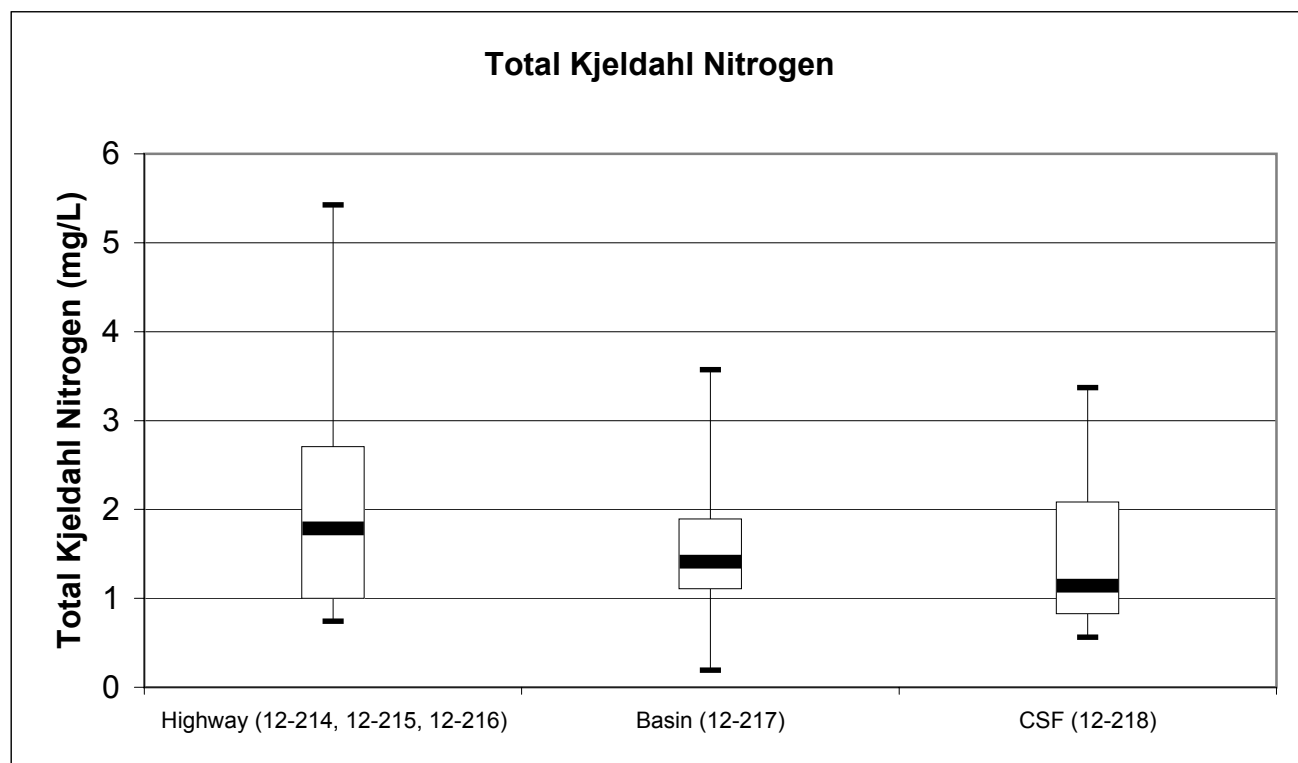
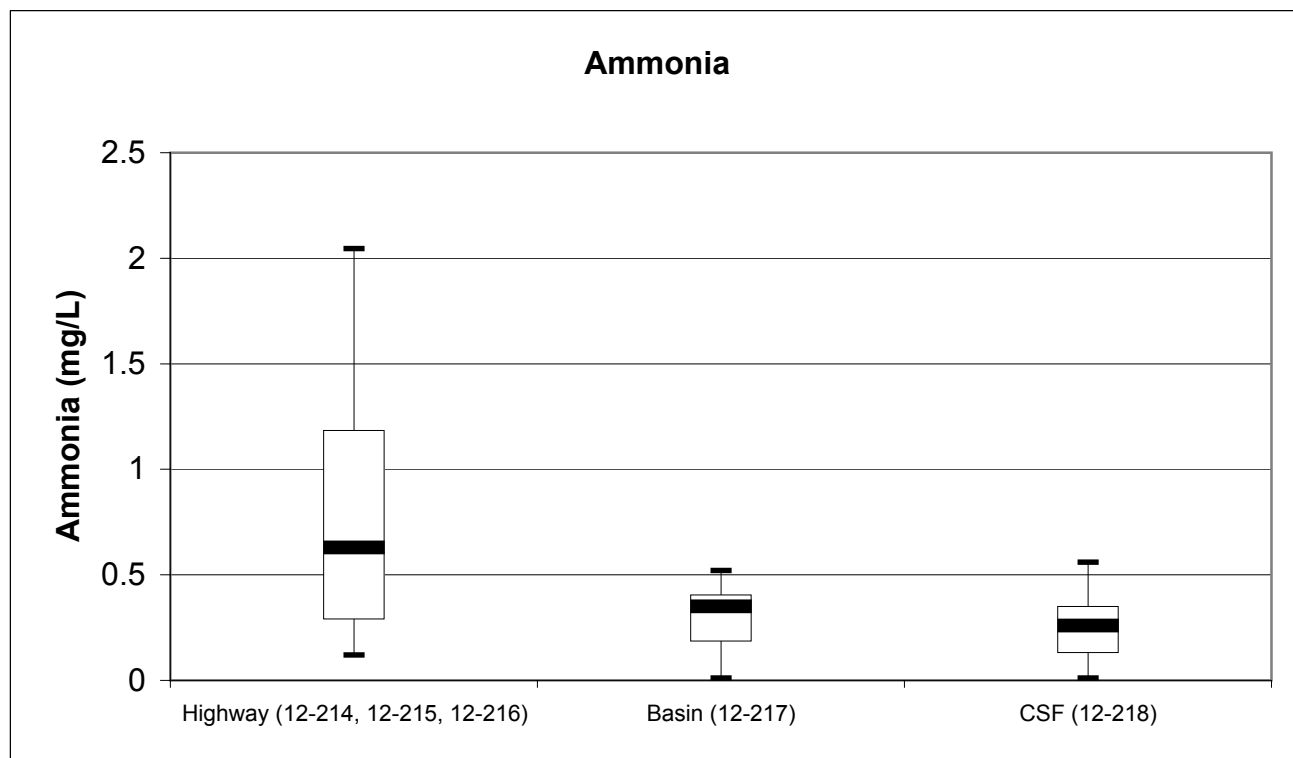
17



Distribution of Total and Dissolved Nickel  
CSF System 506R  
Orange County, California



Distribution of Total and Dissolved Zinc  
 CSF System 506R  
 Orange County, California

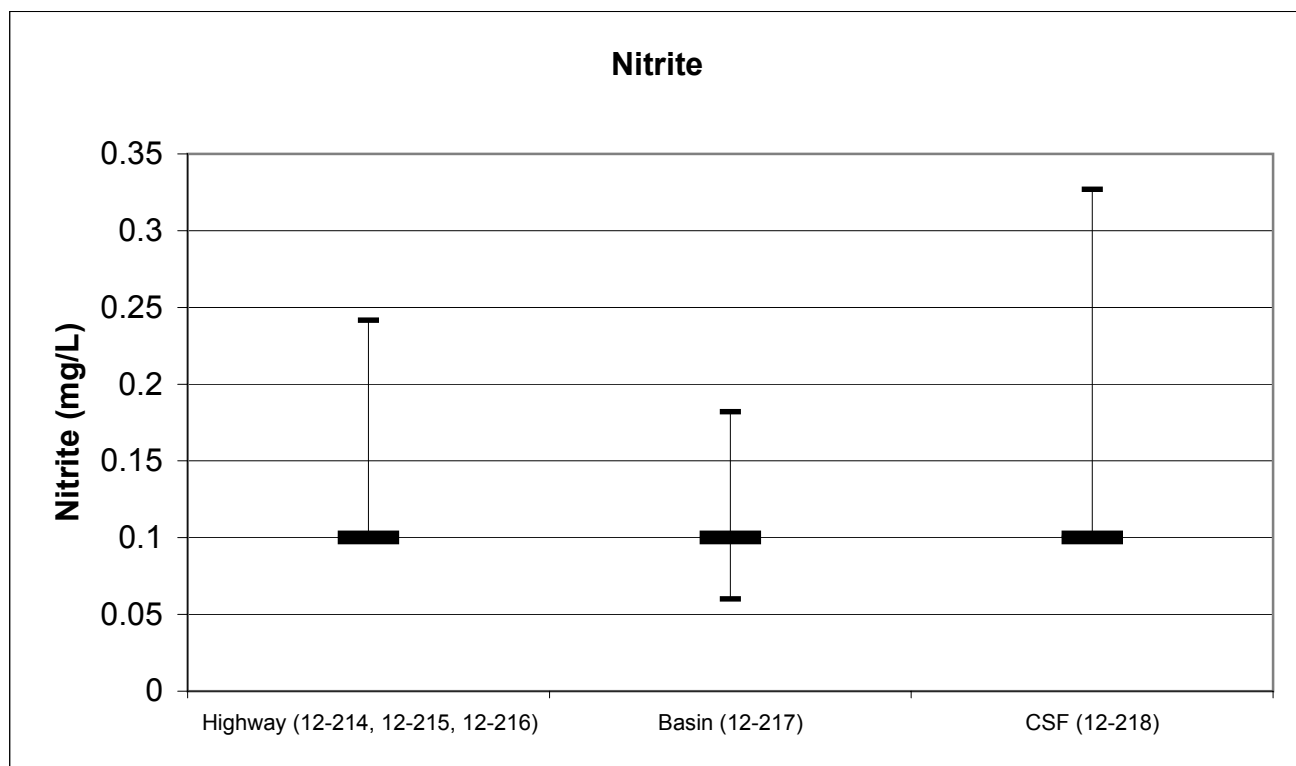
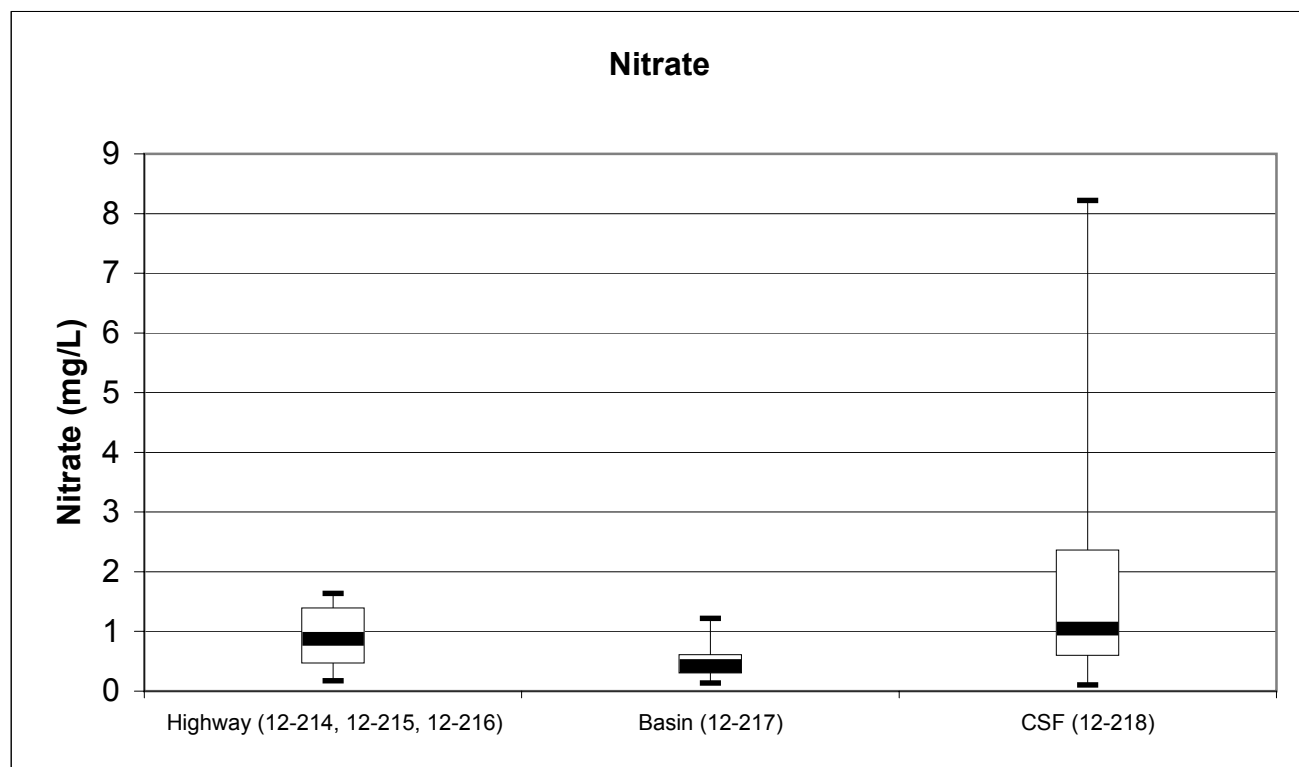


Distribution of Ammonia and Total Kjeldahl Nitrogen  
CSF System 604R  
Orange County, California

Date  
05/22/02

Figure No.

20

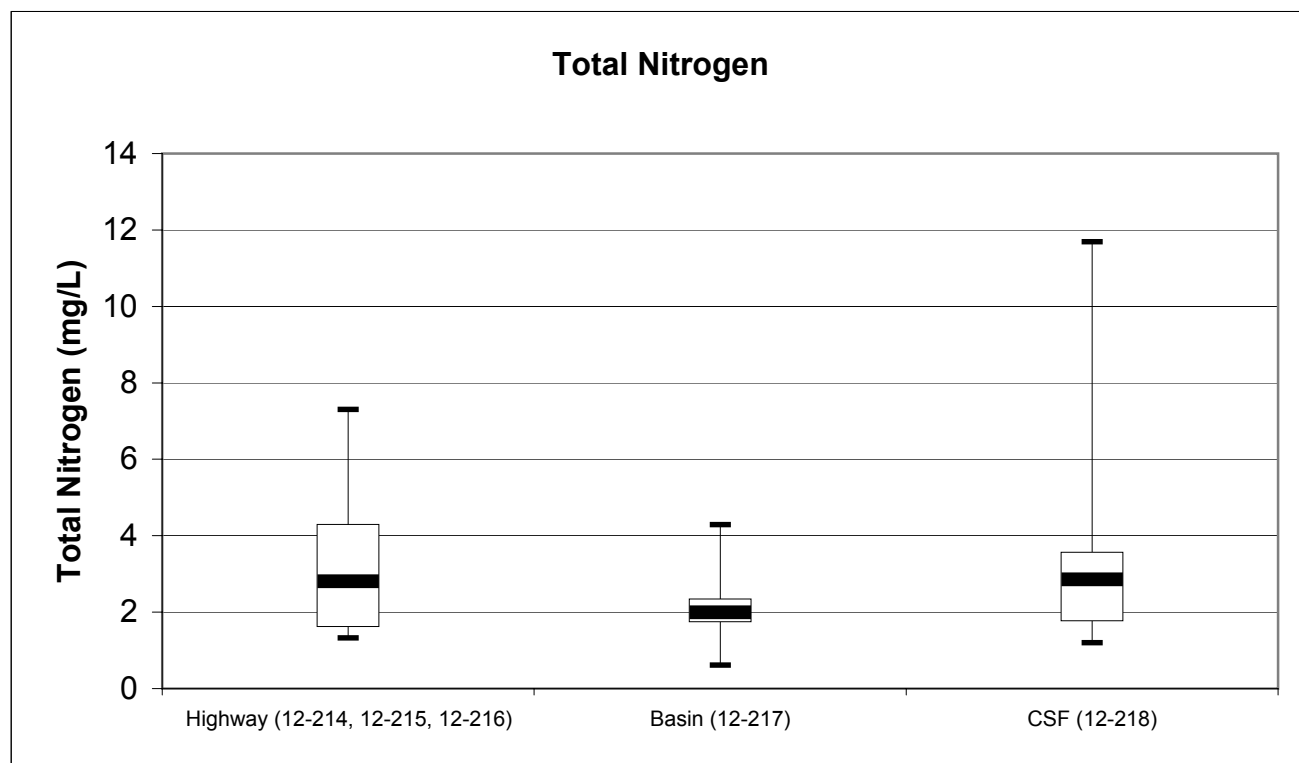


**Distribution of Nitrate and Nitrite**  
 CSF System 604R  
 Orange County, California

Date  
 05/22/02

Figure No.

**21**

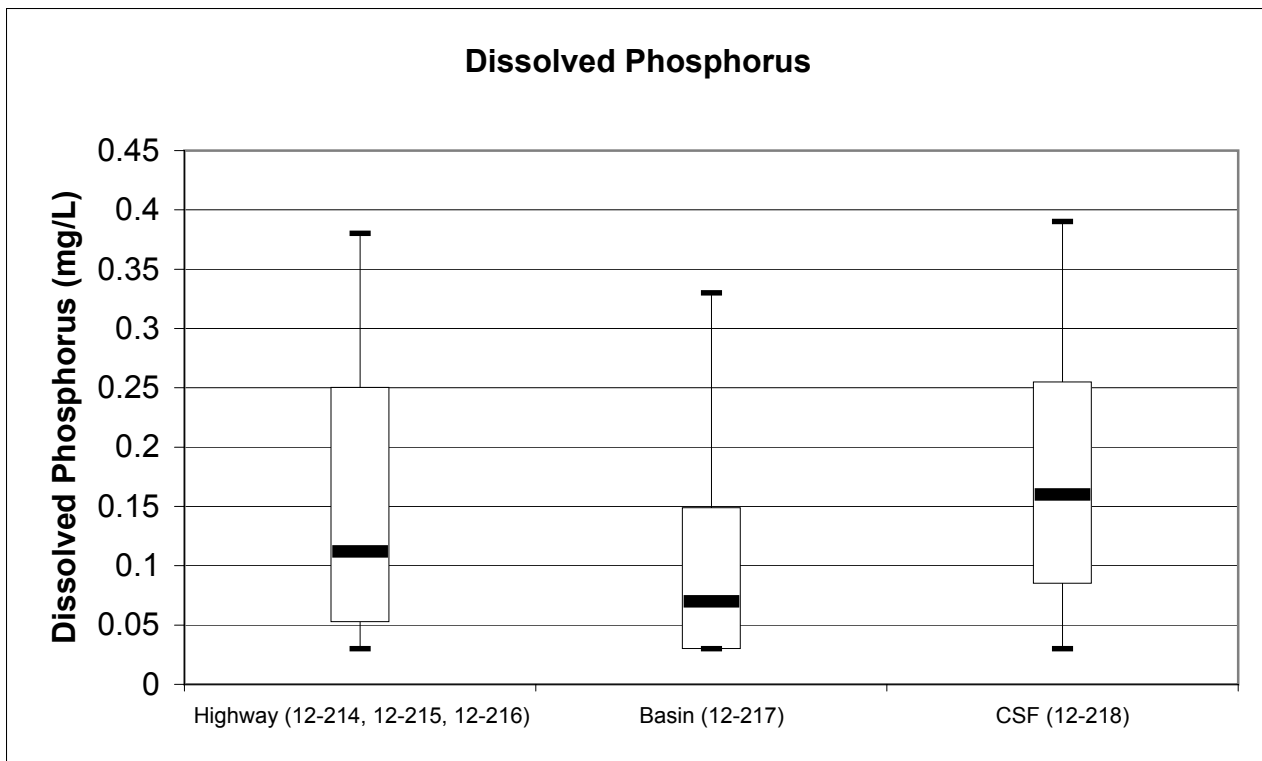
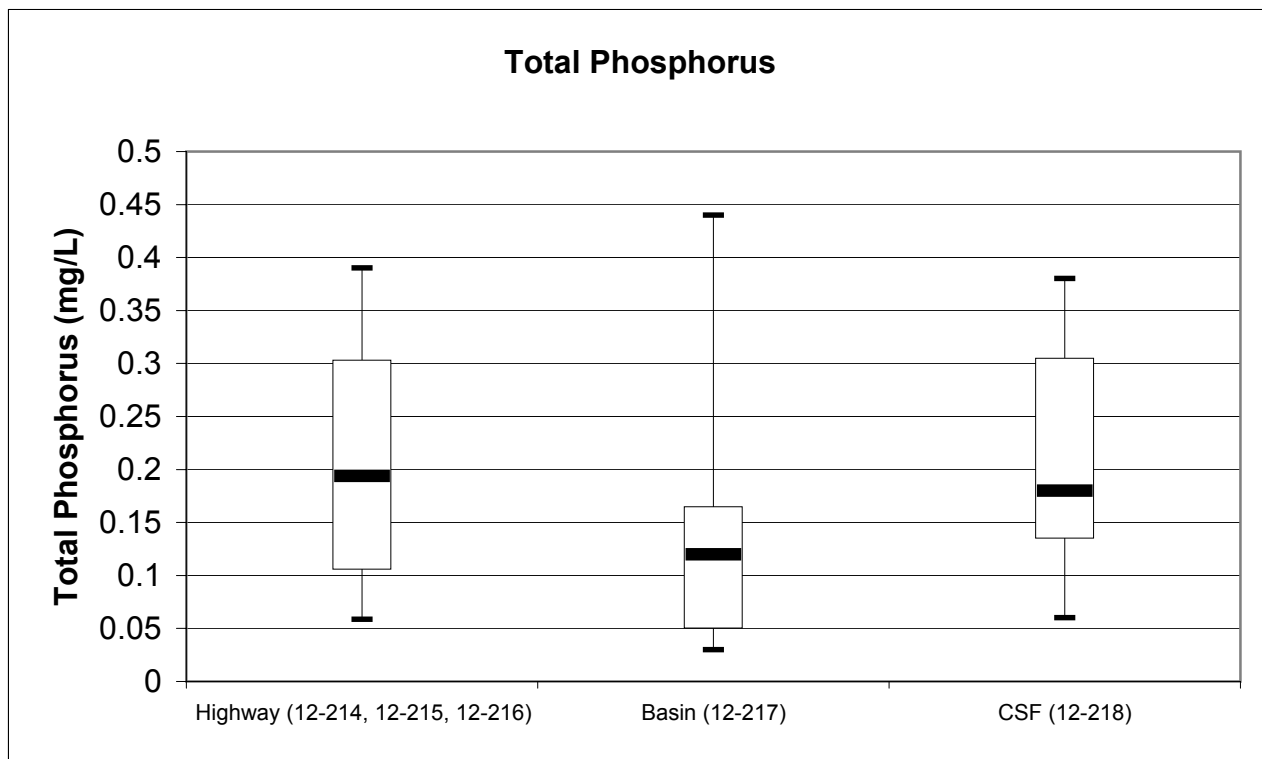


Distribution of Total Nitrogen  
CSF System 604R  
Orange County, California

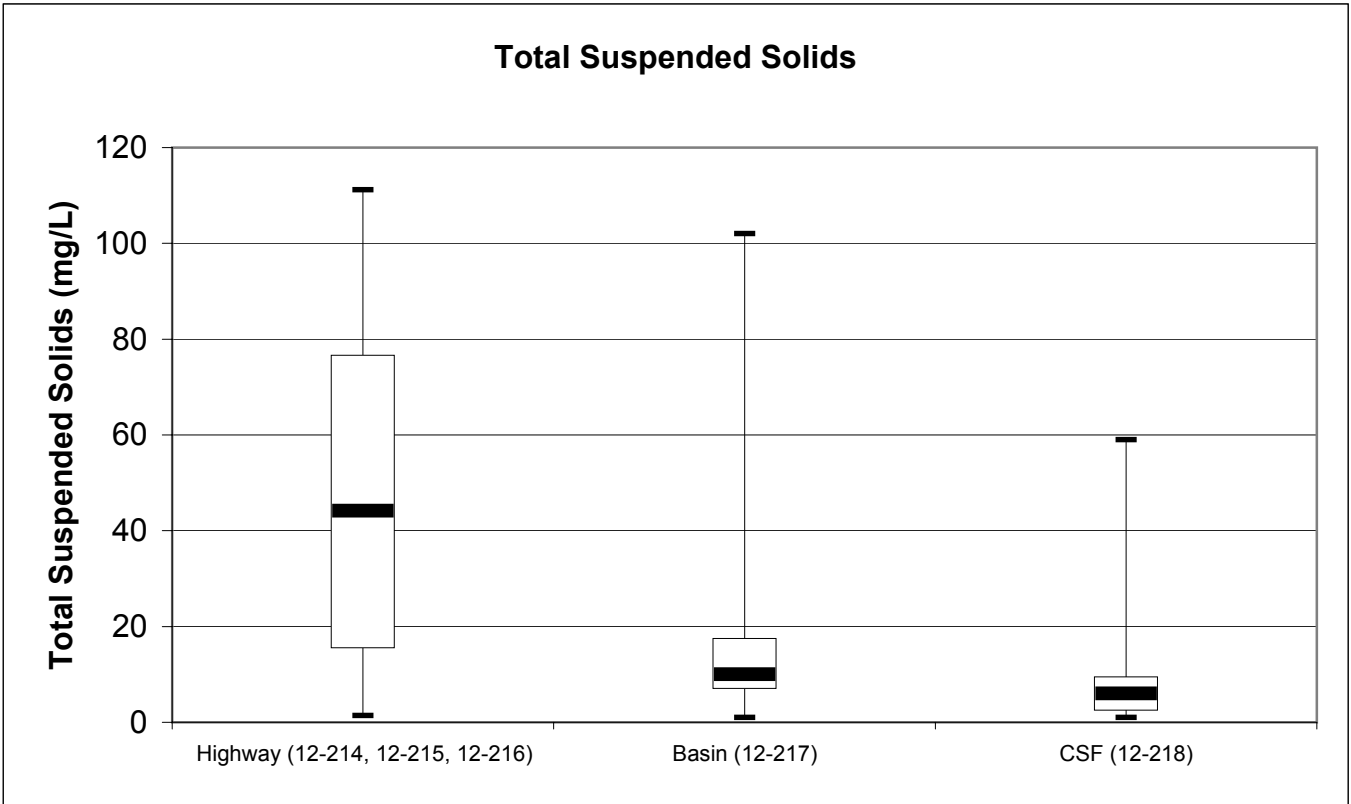
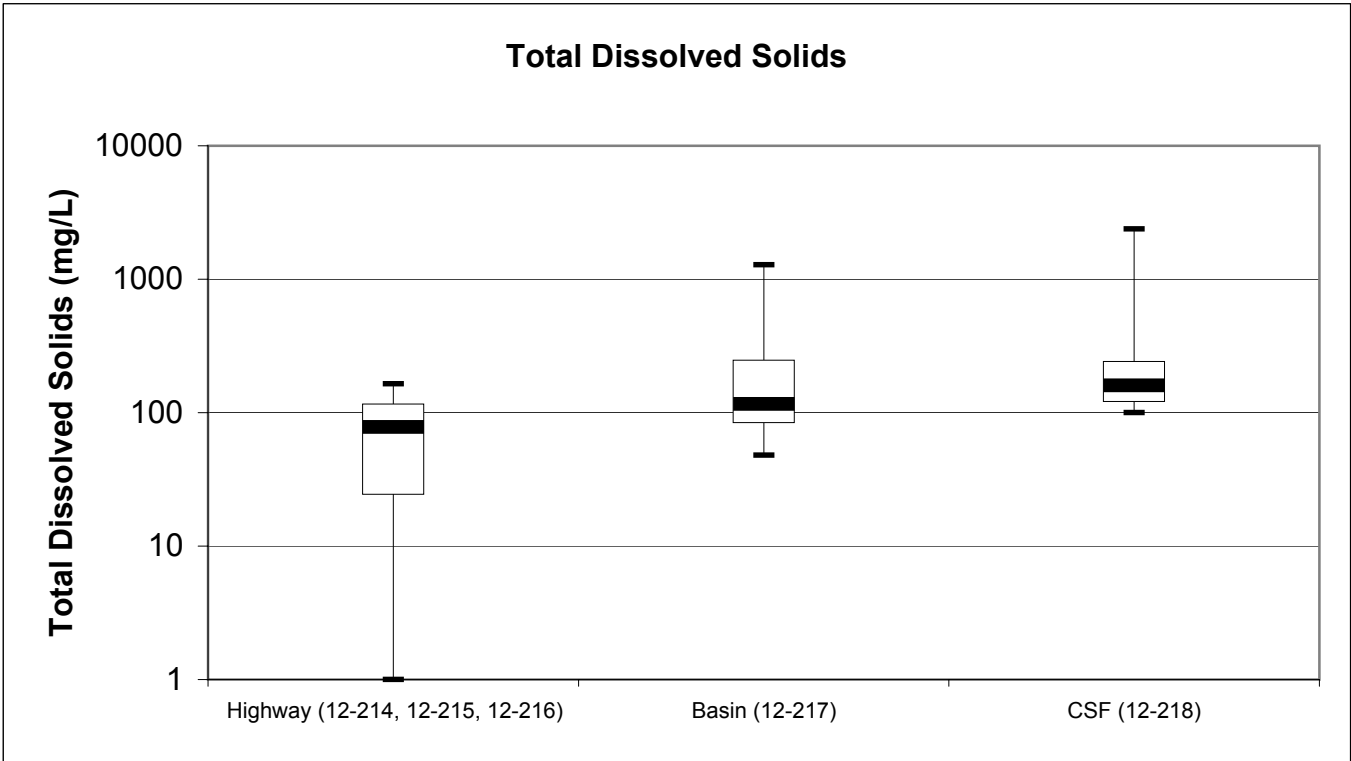
Date  
05/22/02

Figure No.

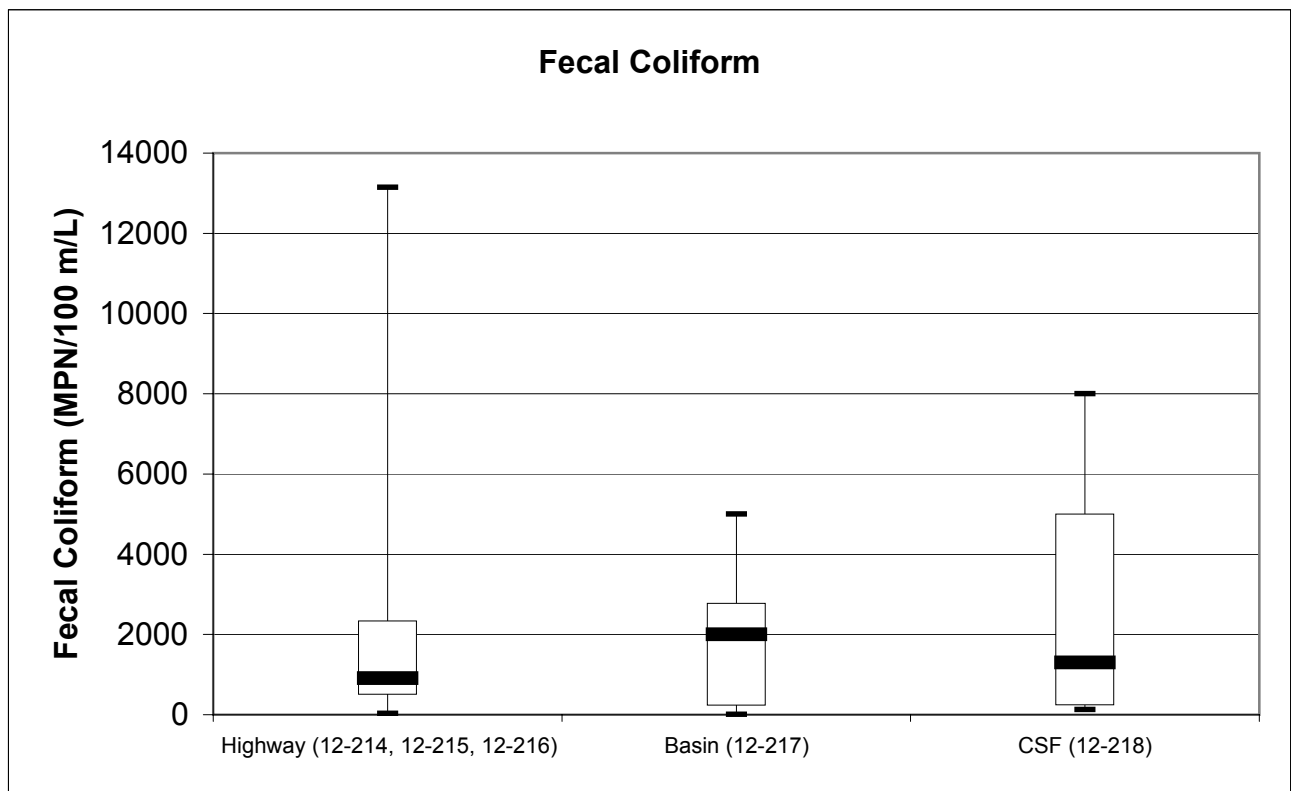
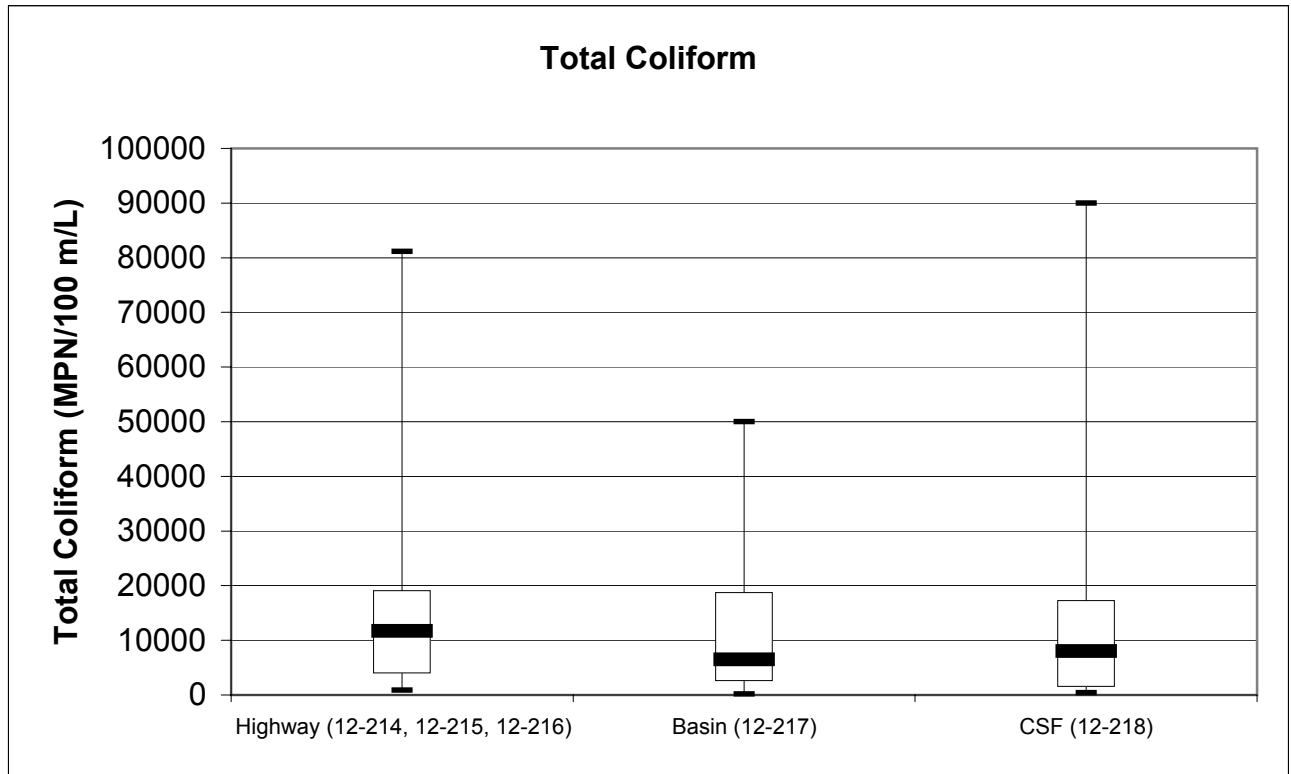
22



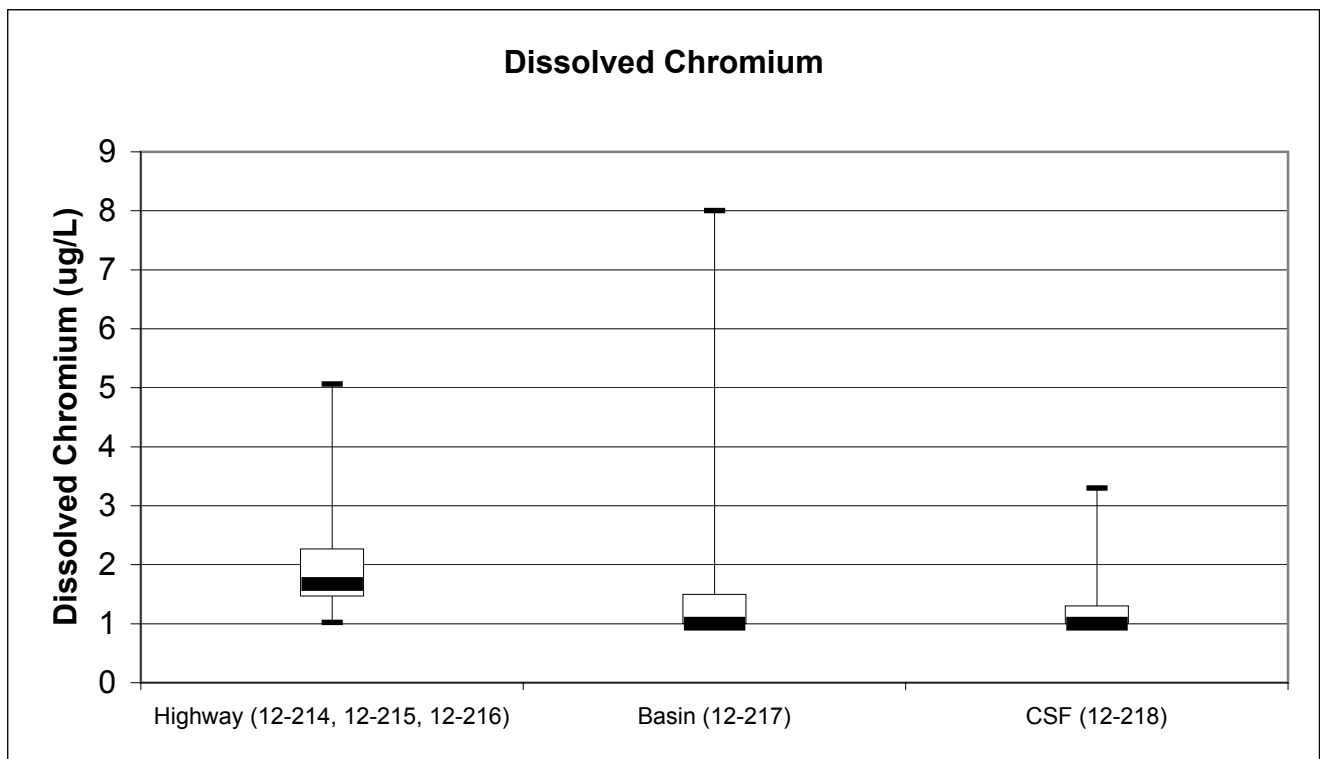
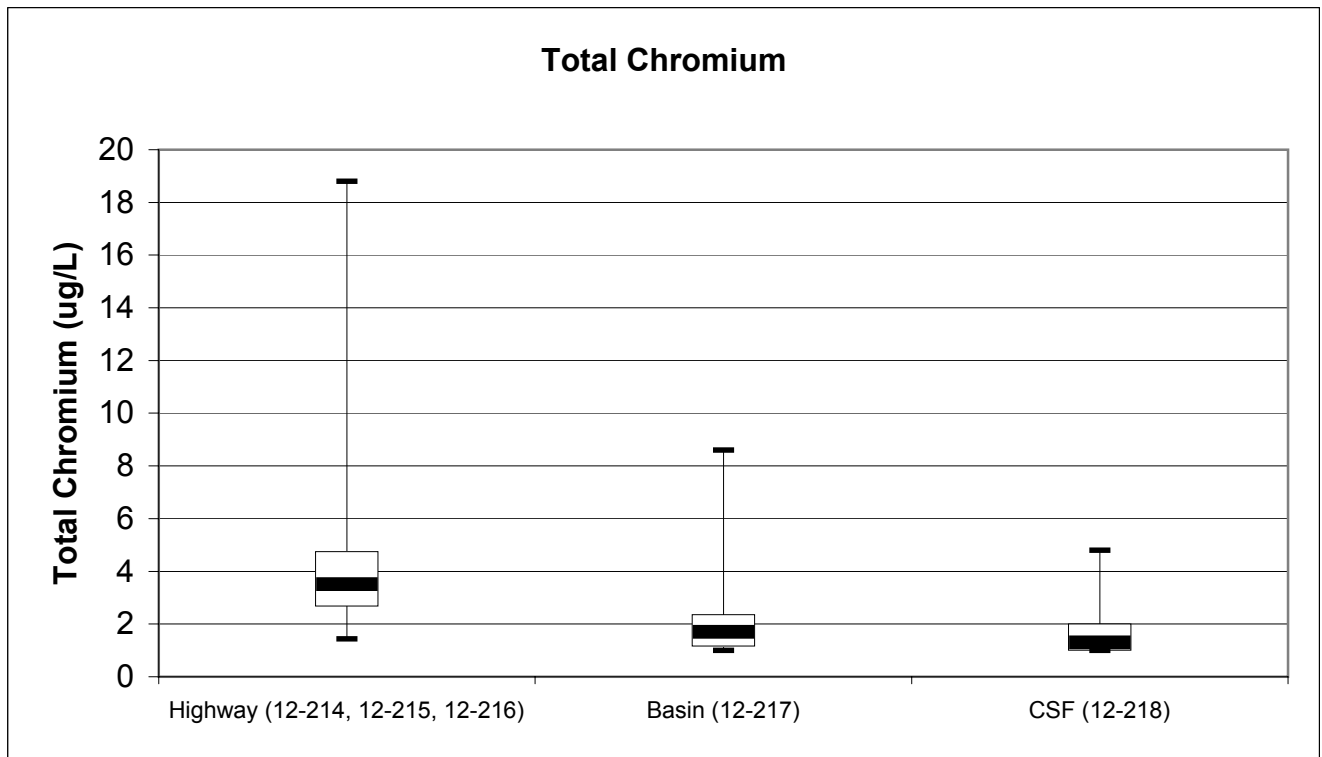
Distribution of Total and Dissolved Phosphorous  
CSF System 604R  
Orange County, California



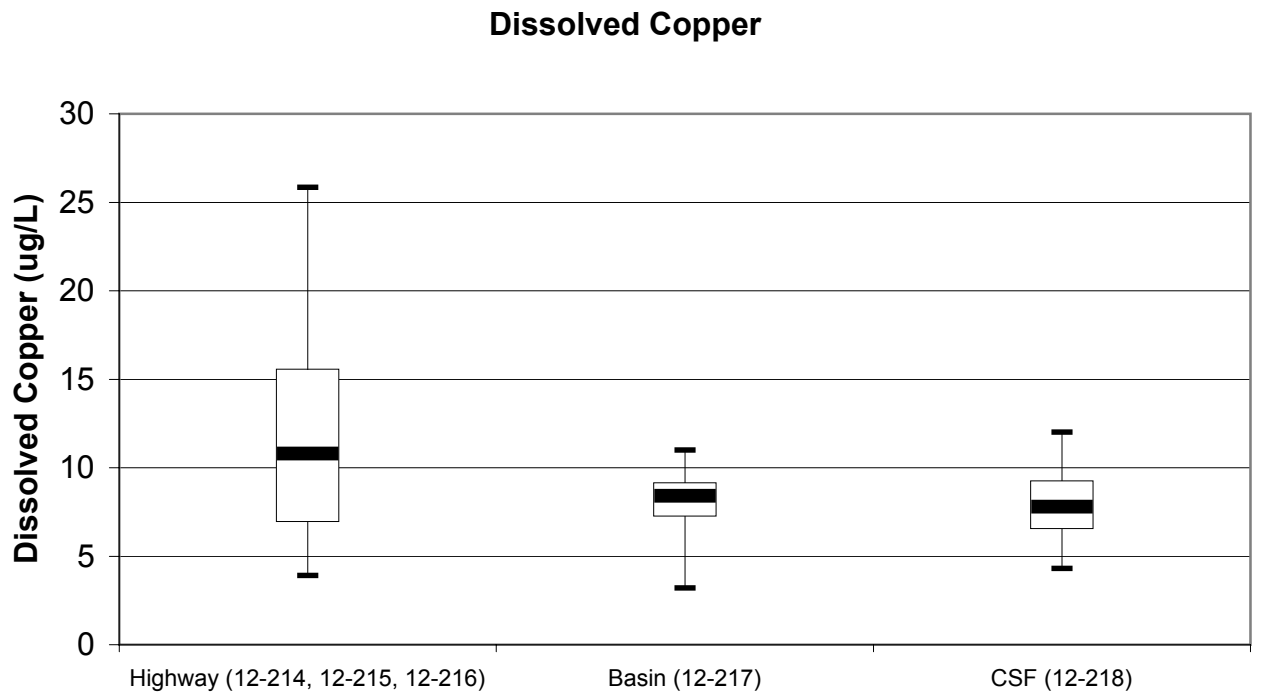
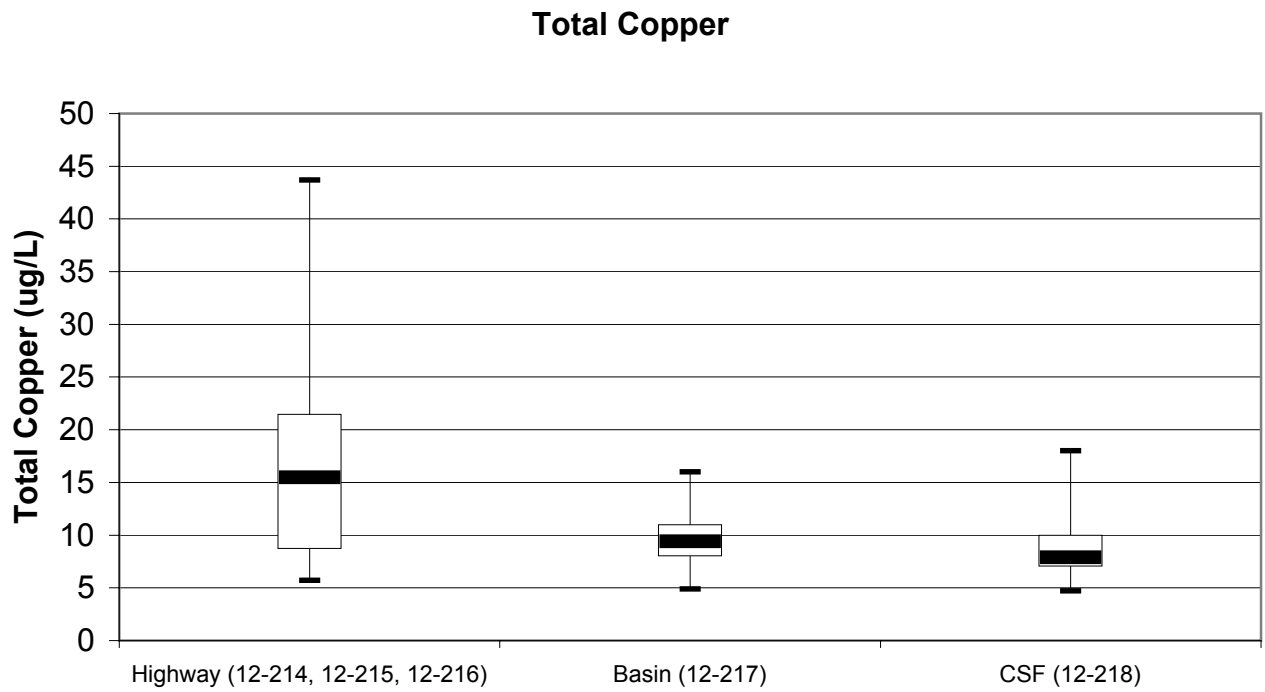
**Distribution of Total Dissolved and Suspended Solids**  
 CSF System 604R  
 Orange County, California



**Distribution of Total and Fecal Coliform**  
 CSF System 604R  
 Orange County, California



Distribution of Total and Dissolved Chromium  
CSF System 604R  
Orange County, California

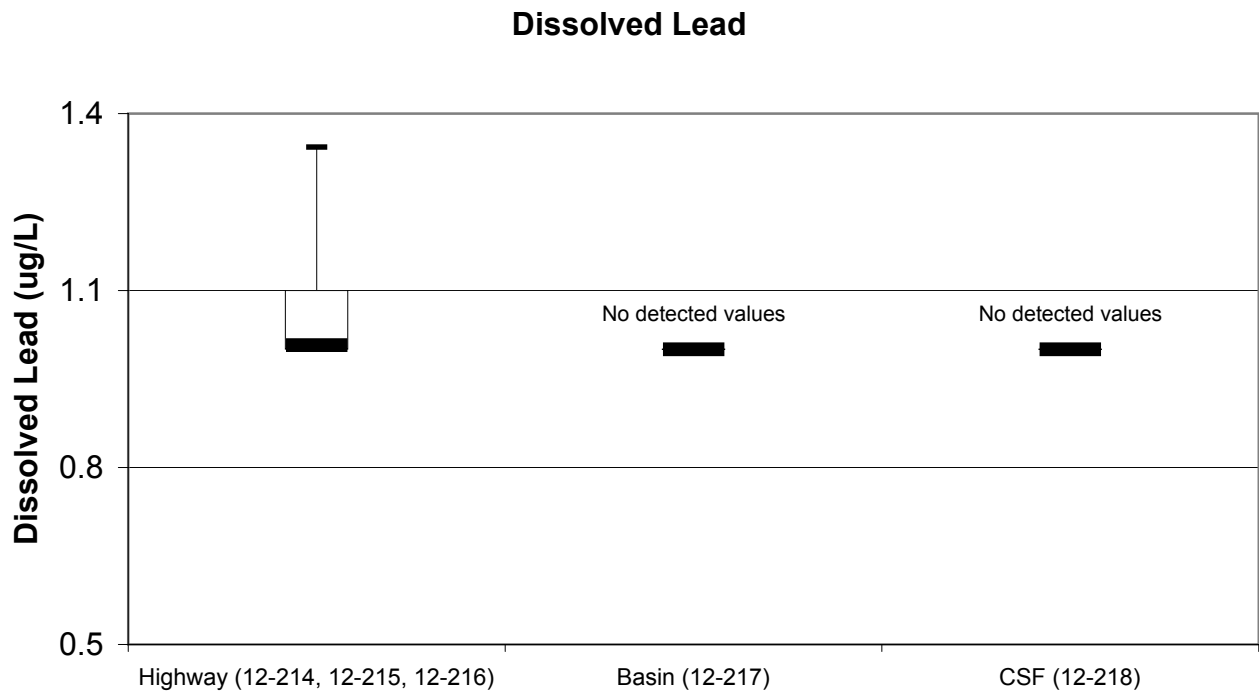
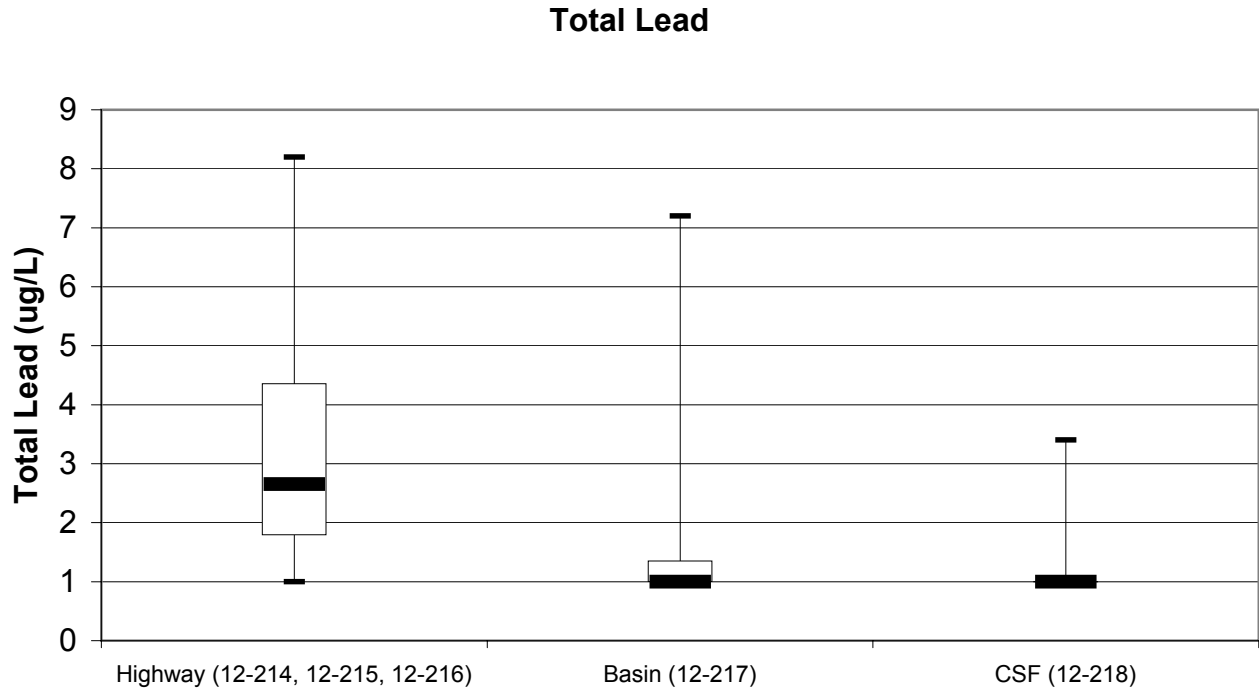


Distribution of Total and Dissolved Copper  
CSF System 604R  
Orange County, California

Date  
05/22/02

Figure No.

27

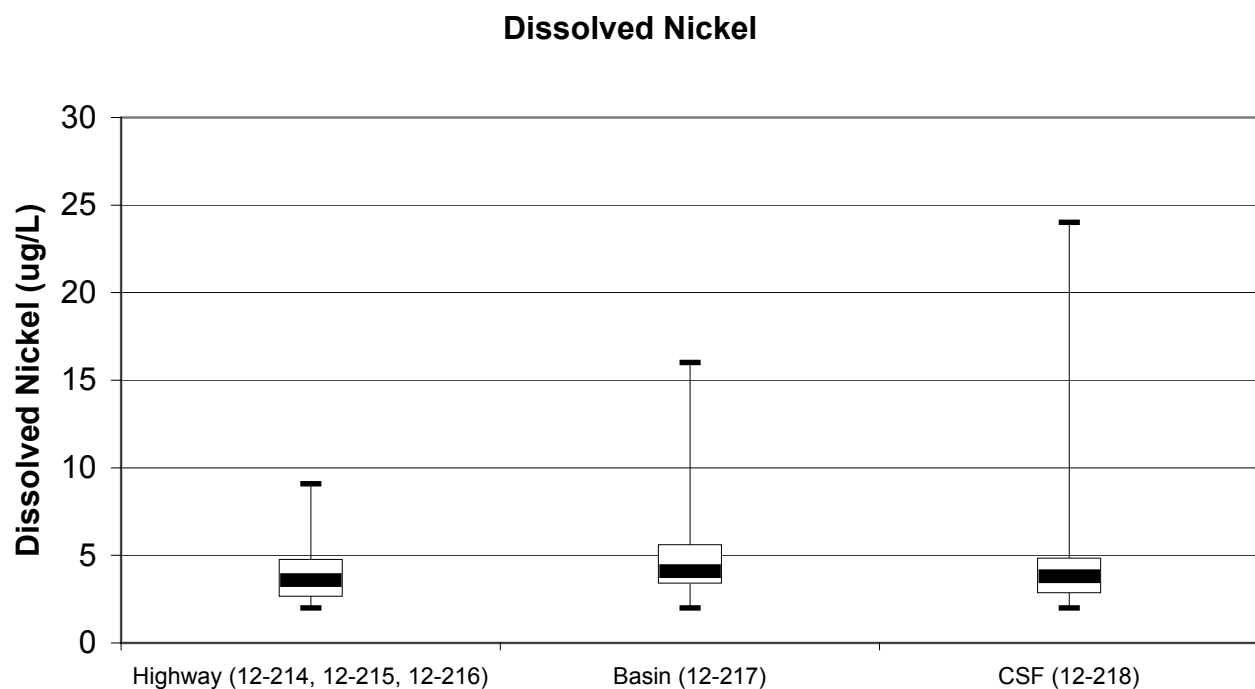
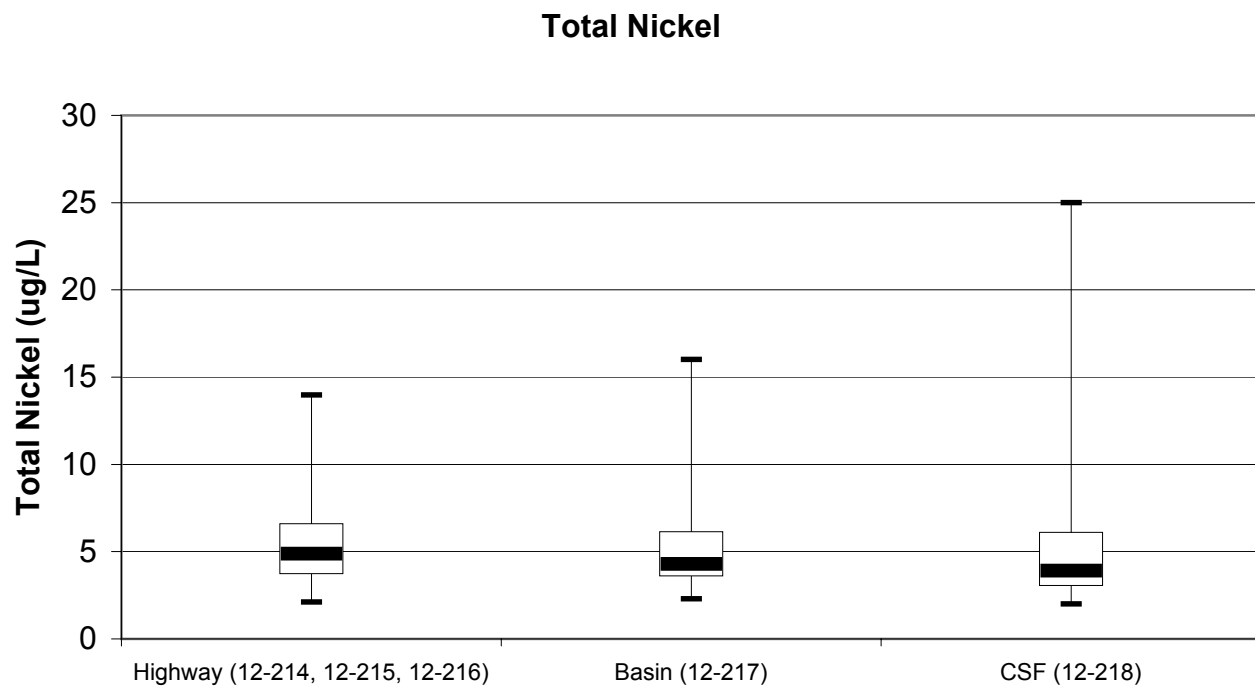


Distribution of Total and Dissolved Lead  
CSF System 604R  
Orange County, California

Date  
05/22/02

Figure No.

28

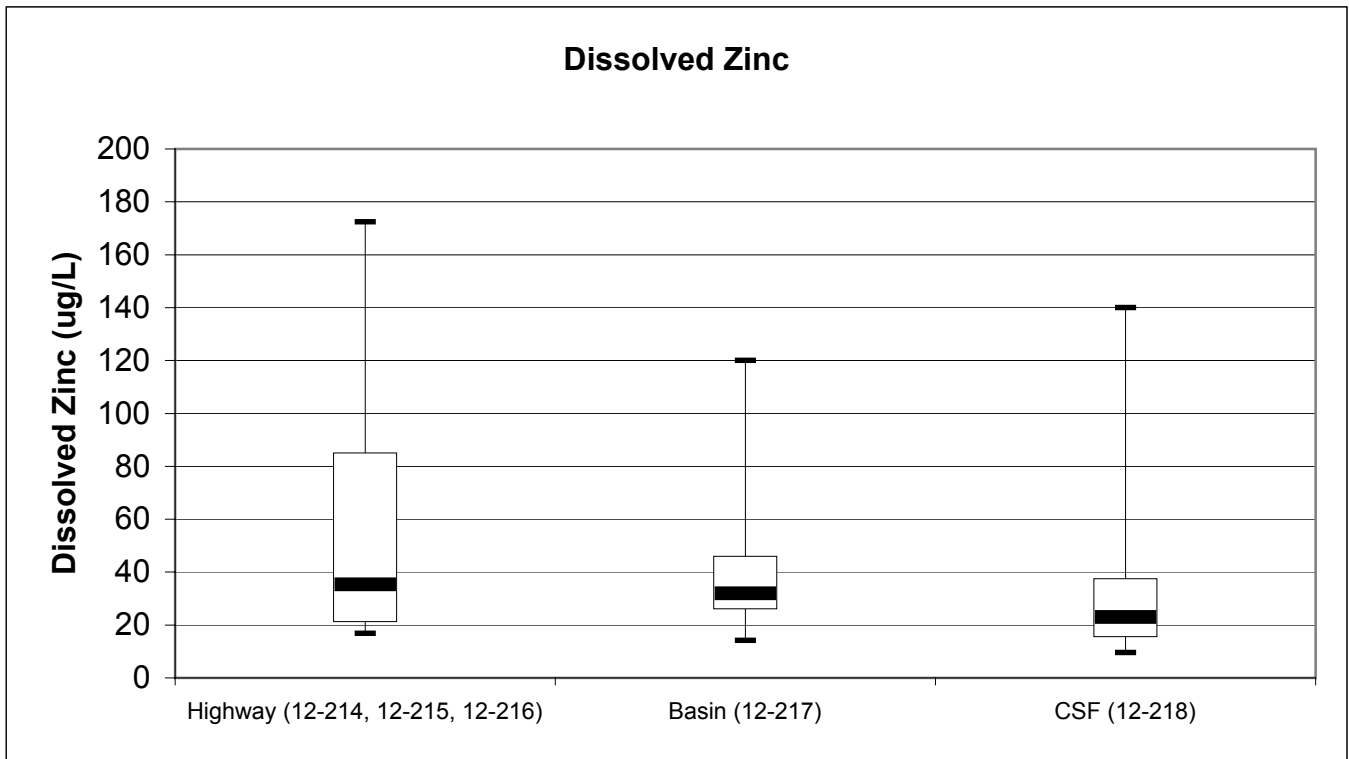
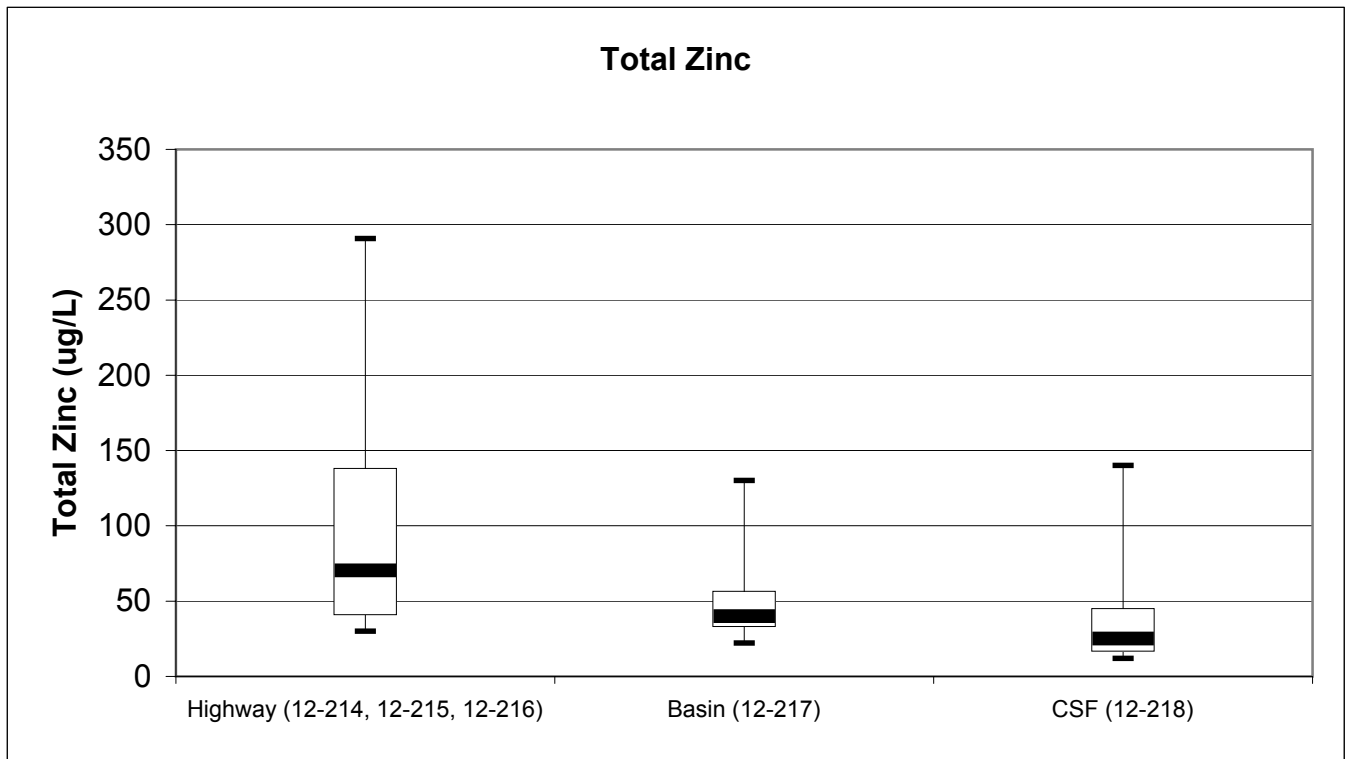


Distribution of Total and Dissolved Nickel  
CSF System 604R  
Orange County, California

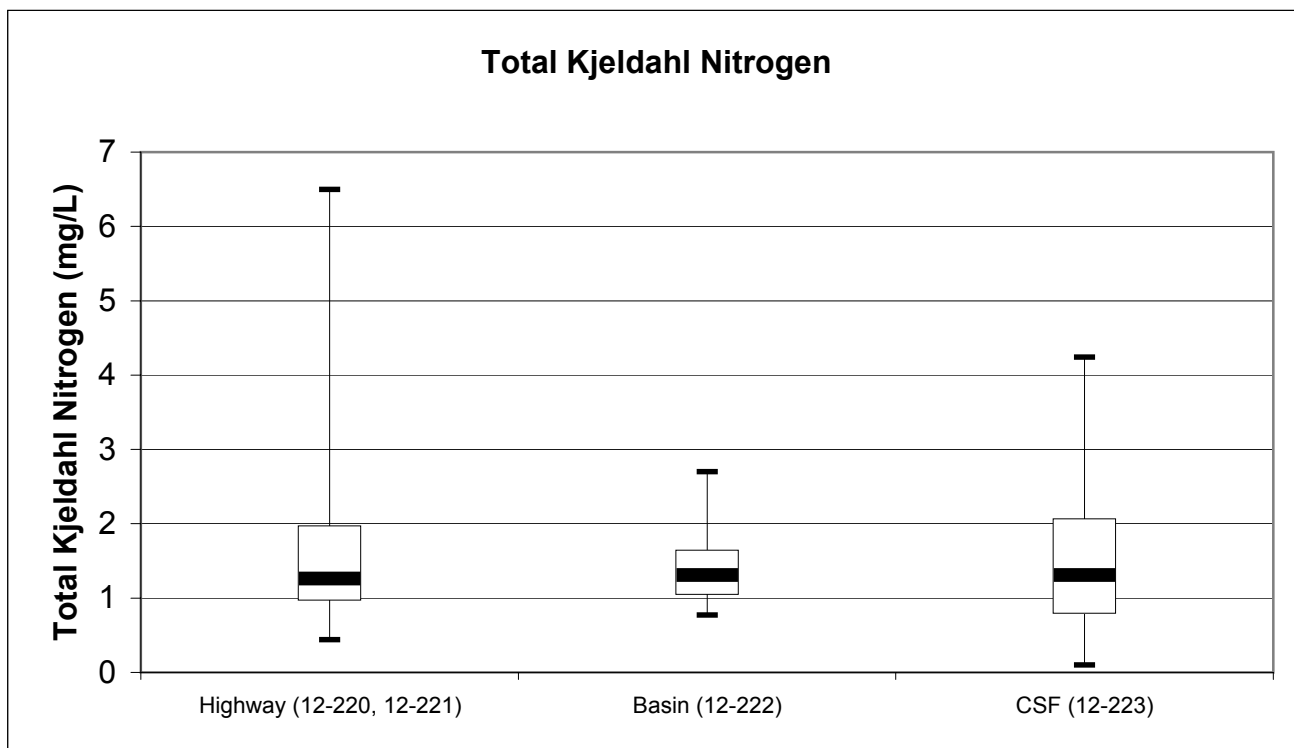
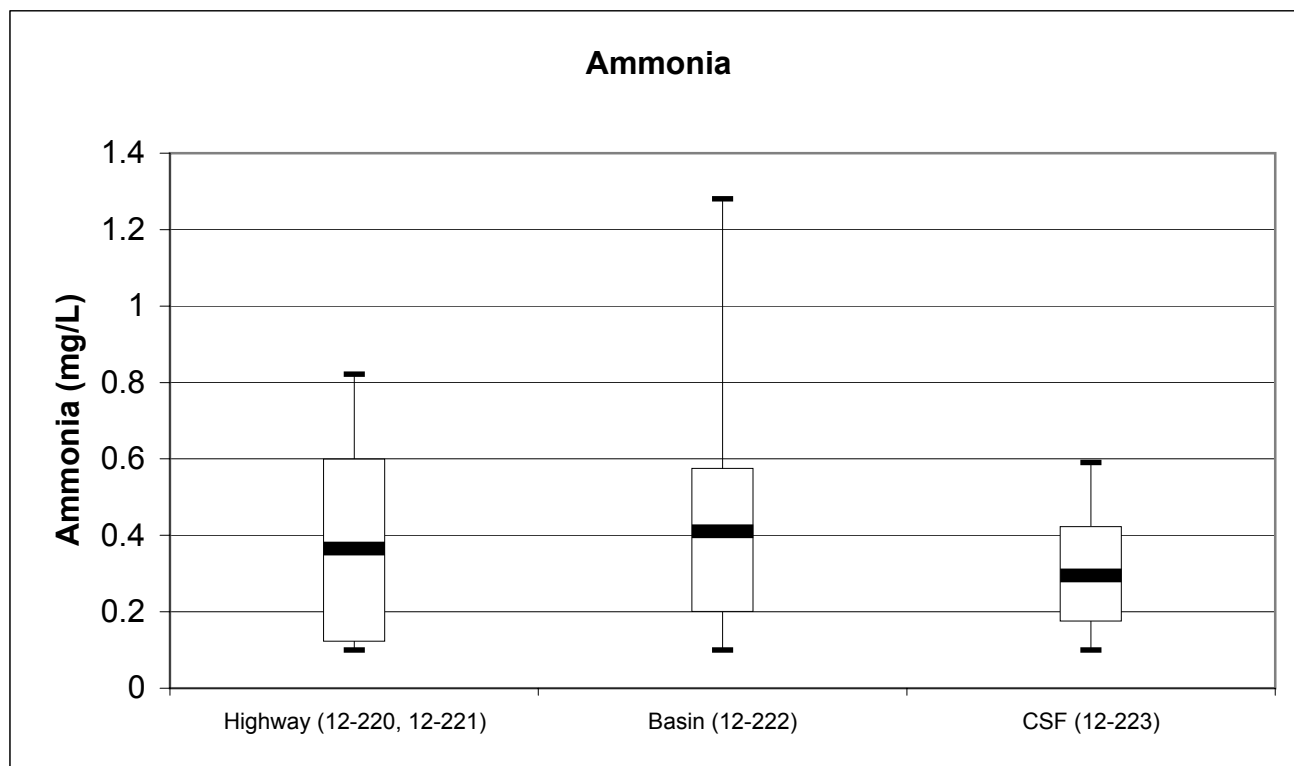
Date  
05/22/02

Figure No.

29



Distribution of Total and Dissolved Zinc  
CSF System 604R  
Orange County, California

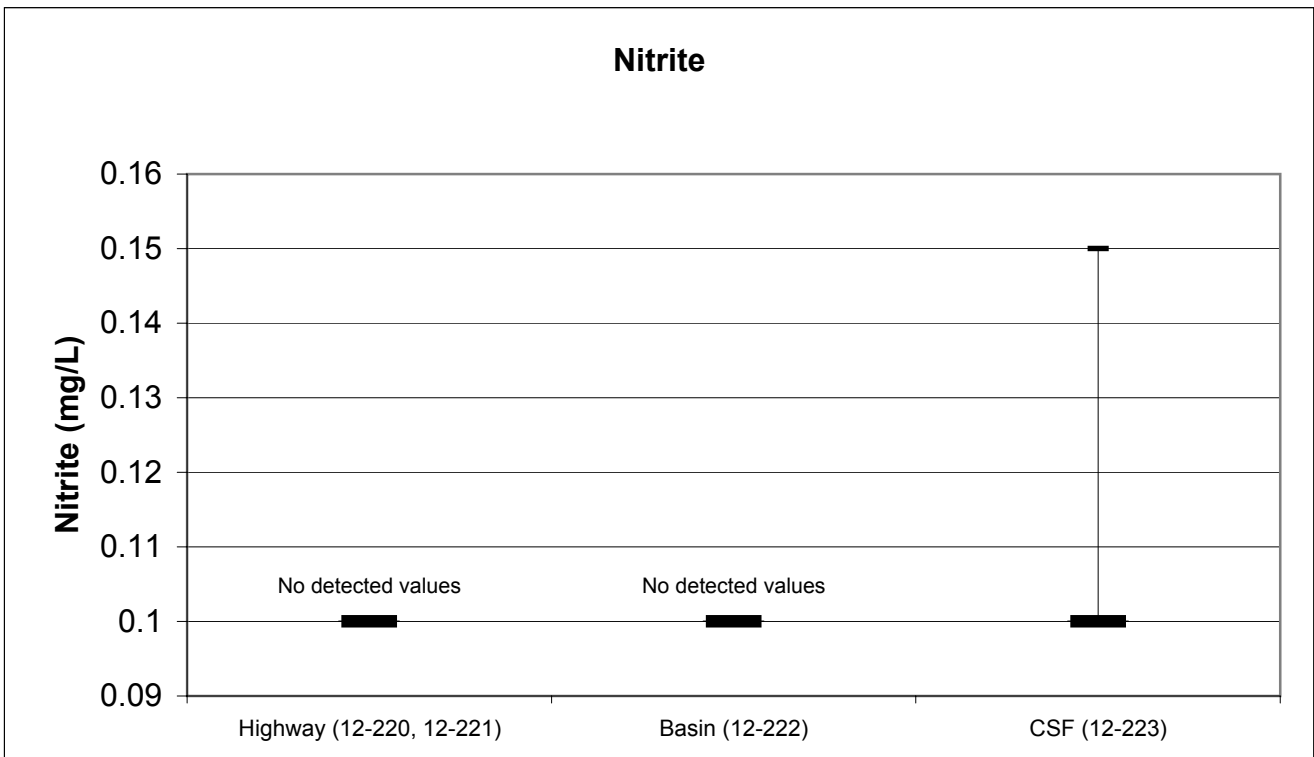
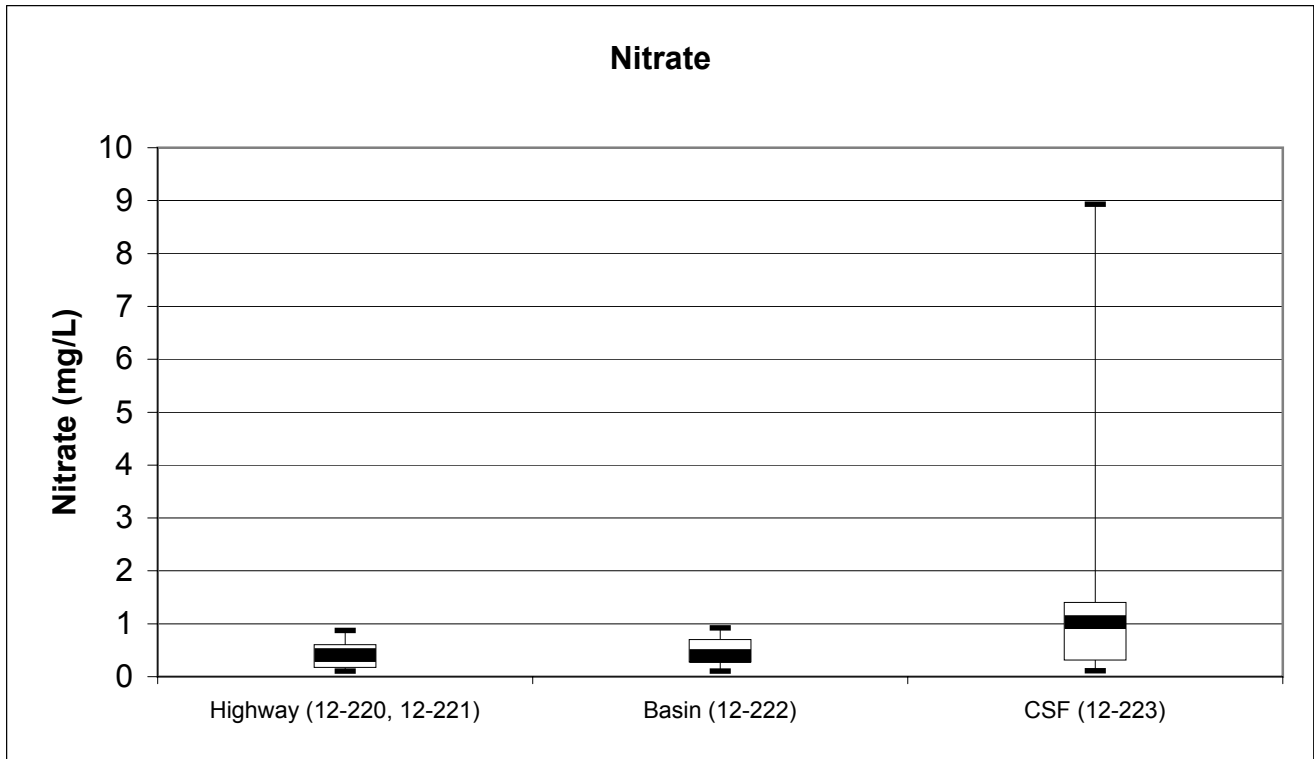


Distribution of Ammonia and Total Kjeldahl Nitrogen  
 CSF System 785L  
 Orange County, California

Date  
 05/22/02

Figure No.

31

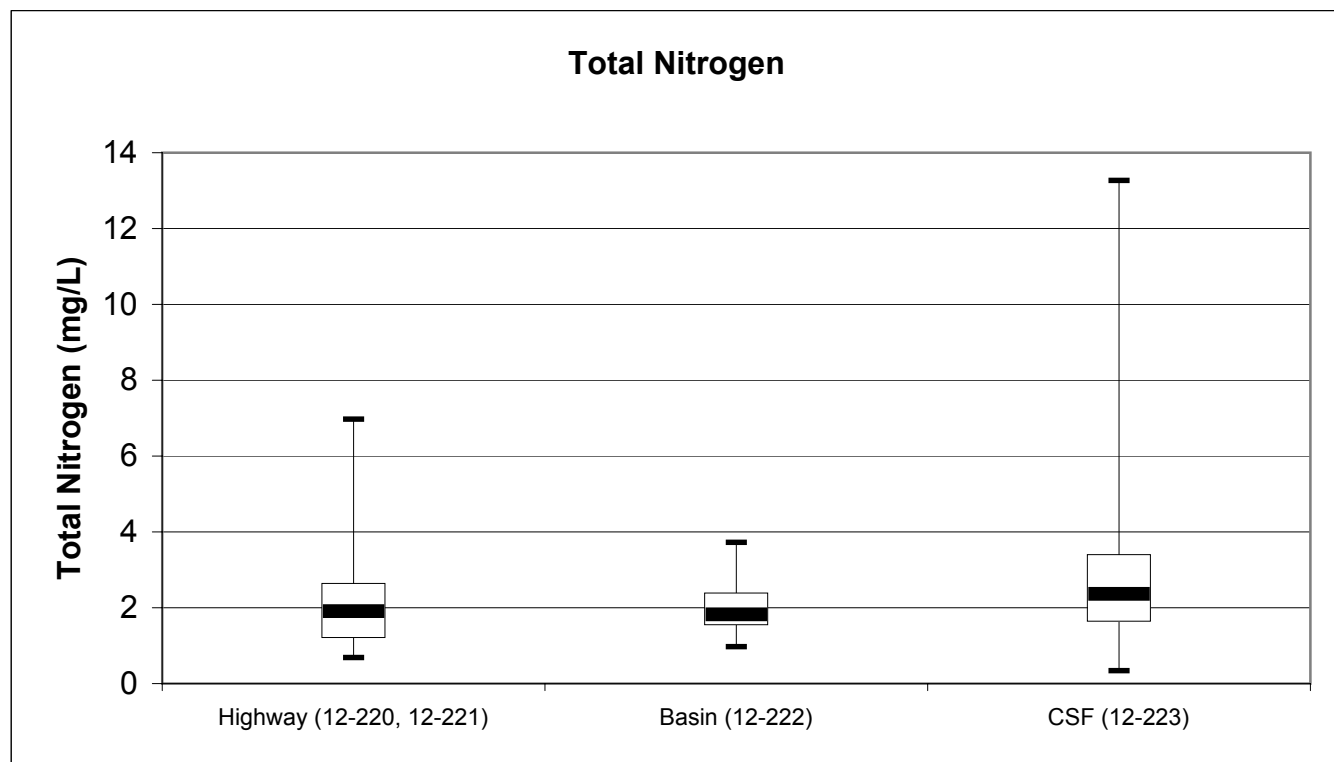


**Distribution of Nitrate and Nitrite**  
 CSF System 785L  
 Orange County, California

Date  
05/22/02

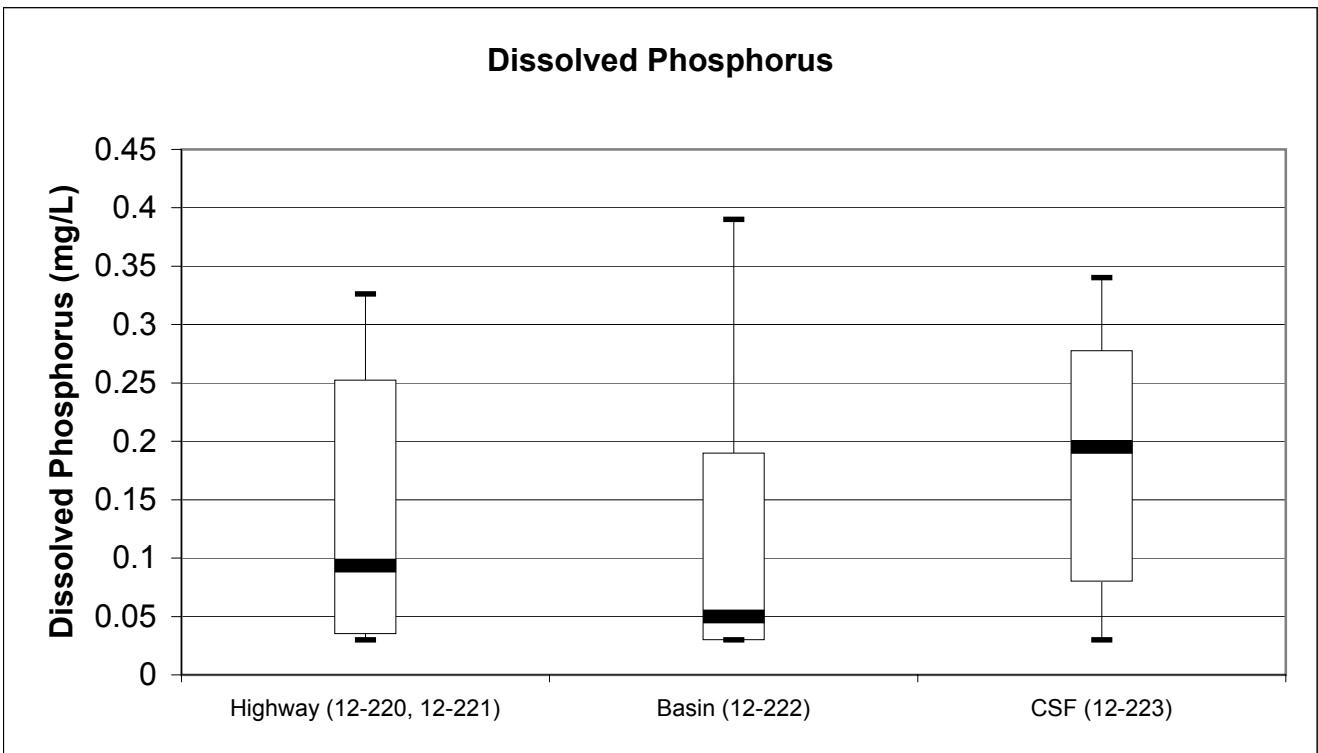
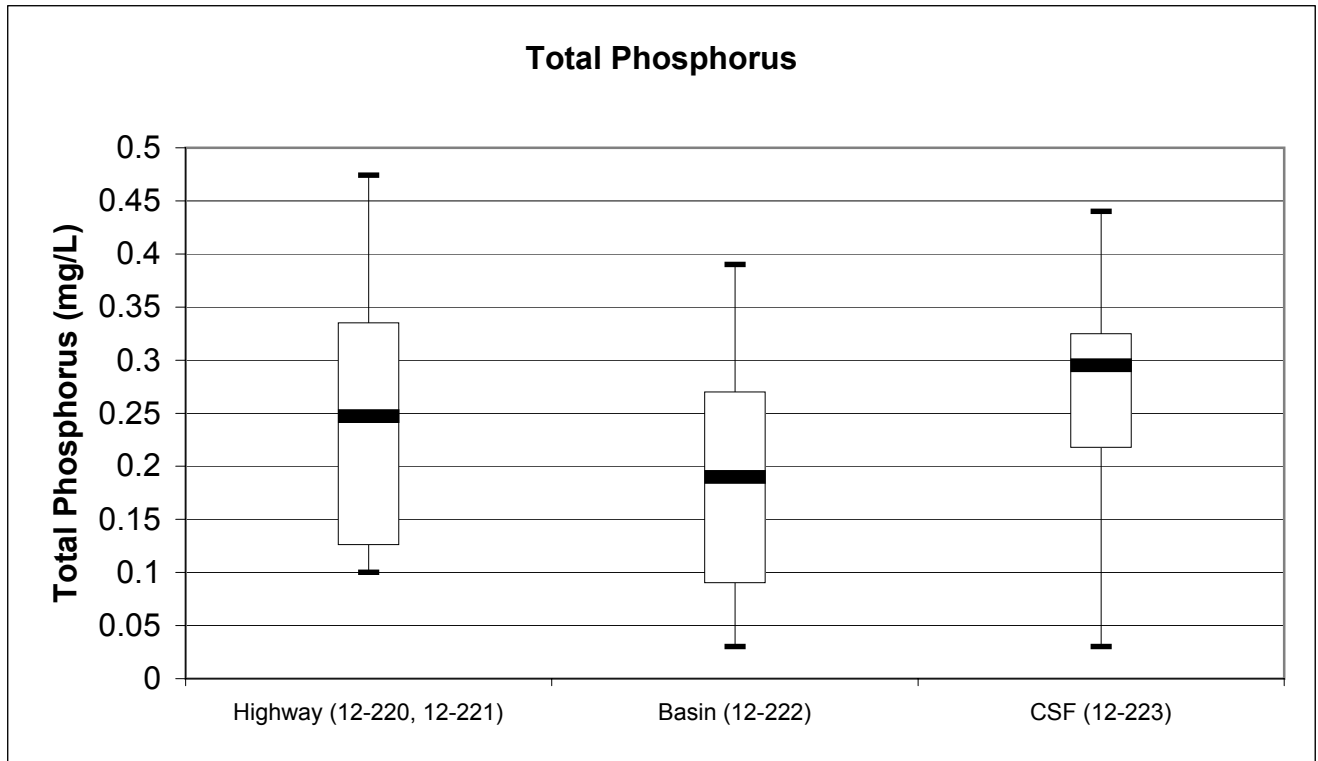
Figure No.

**32**

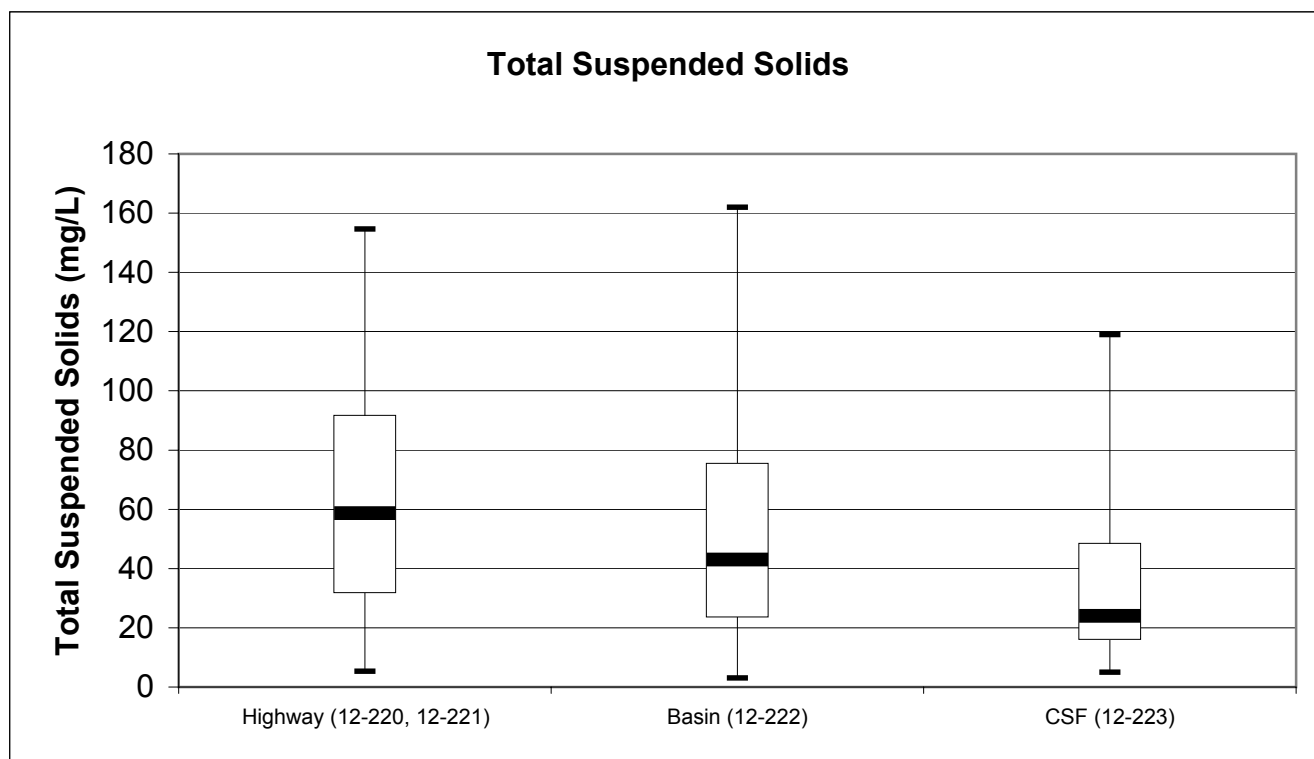
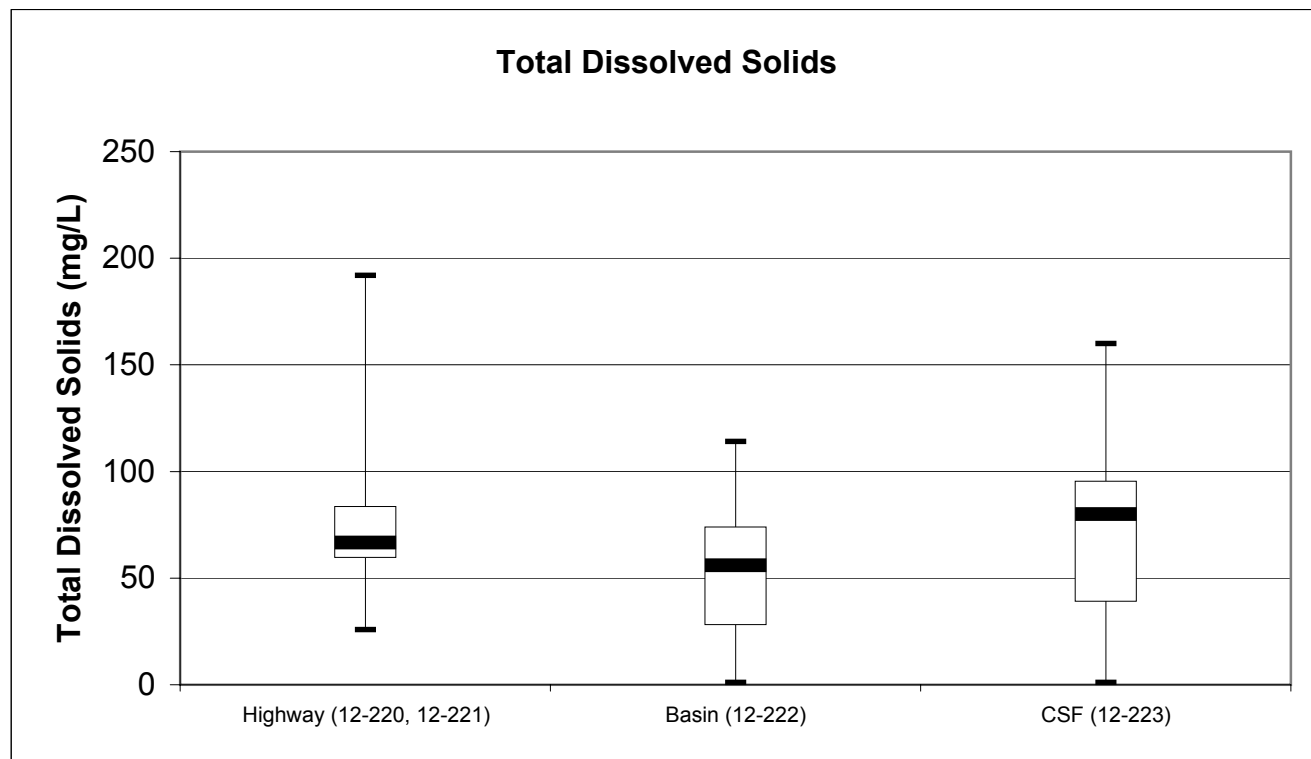


Distribution of Total Nitrogen  
 CSF System 785L  
 Orange County, California

	Figure No.
Date 05/22/02	33

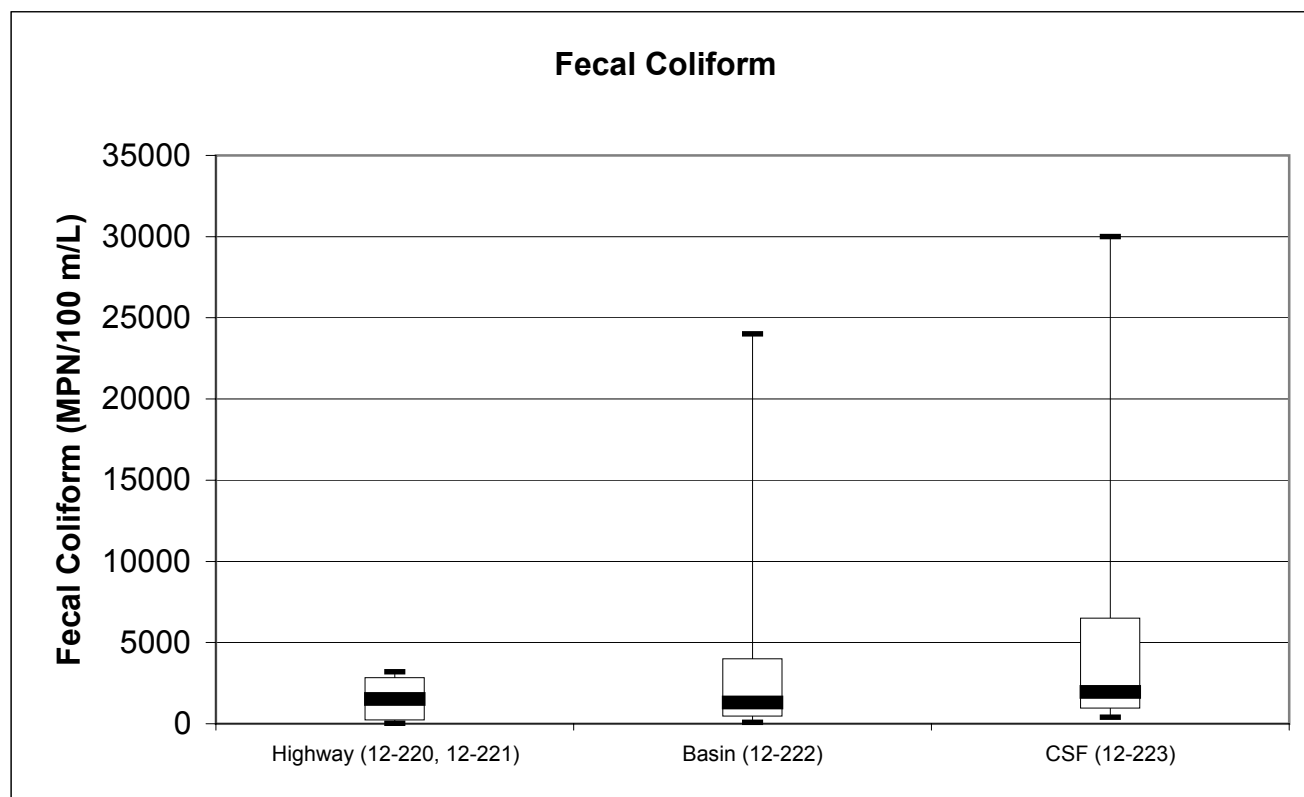
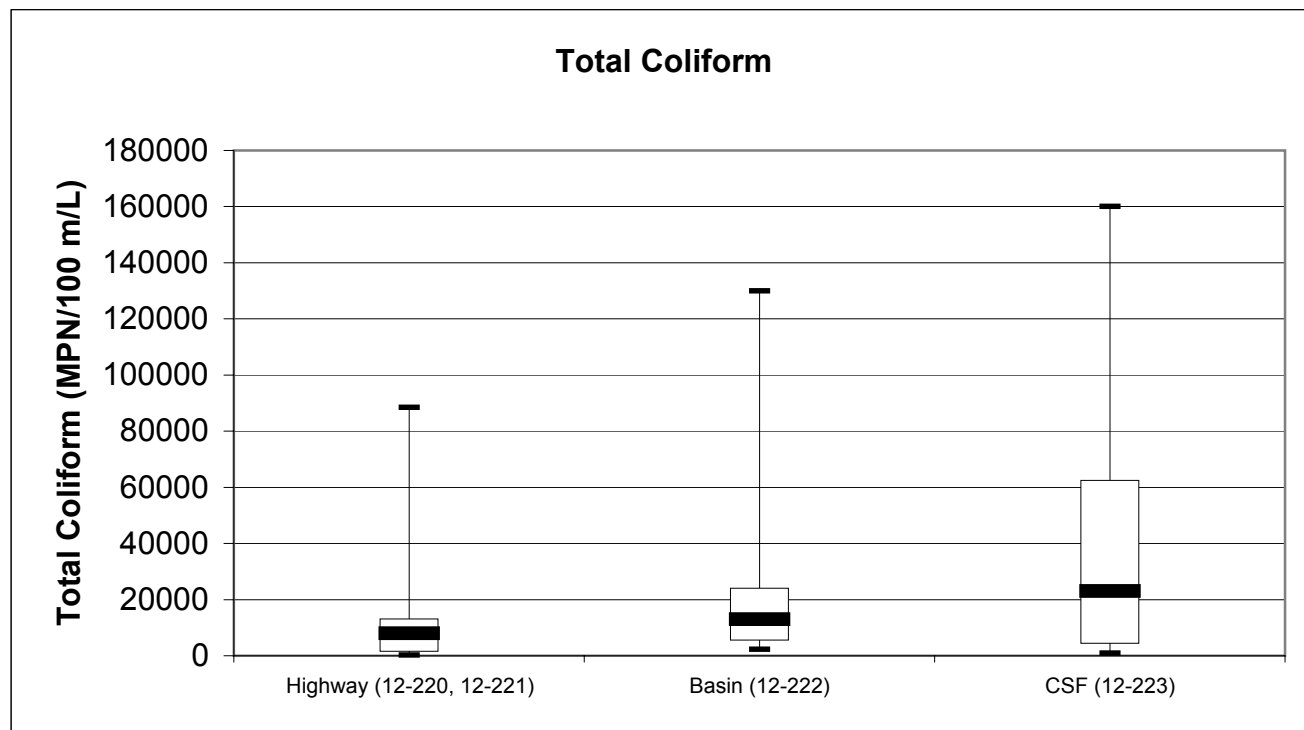


Distribution of Total and Dissolved Phosphorous  
CSF System 785L  
Orange County, California

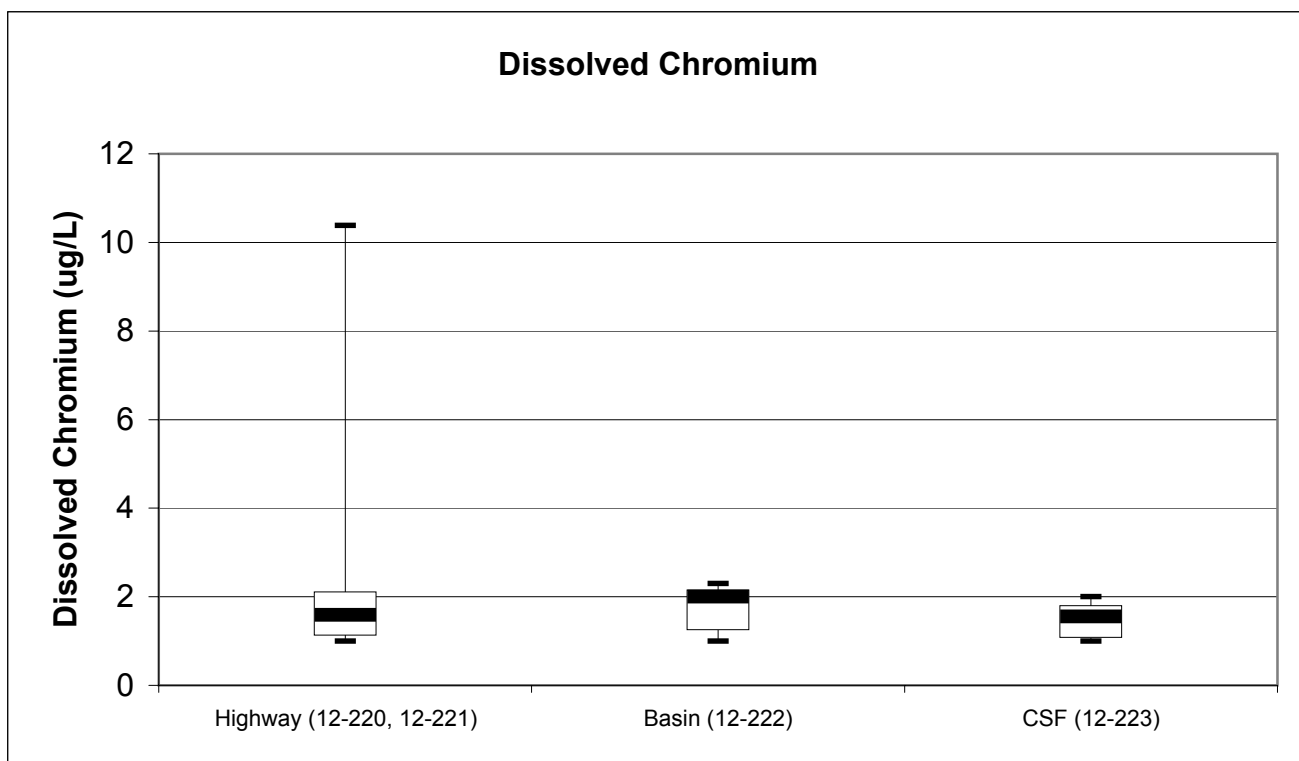
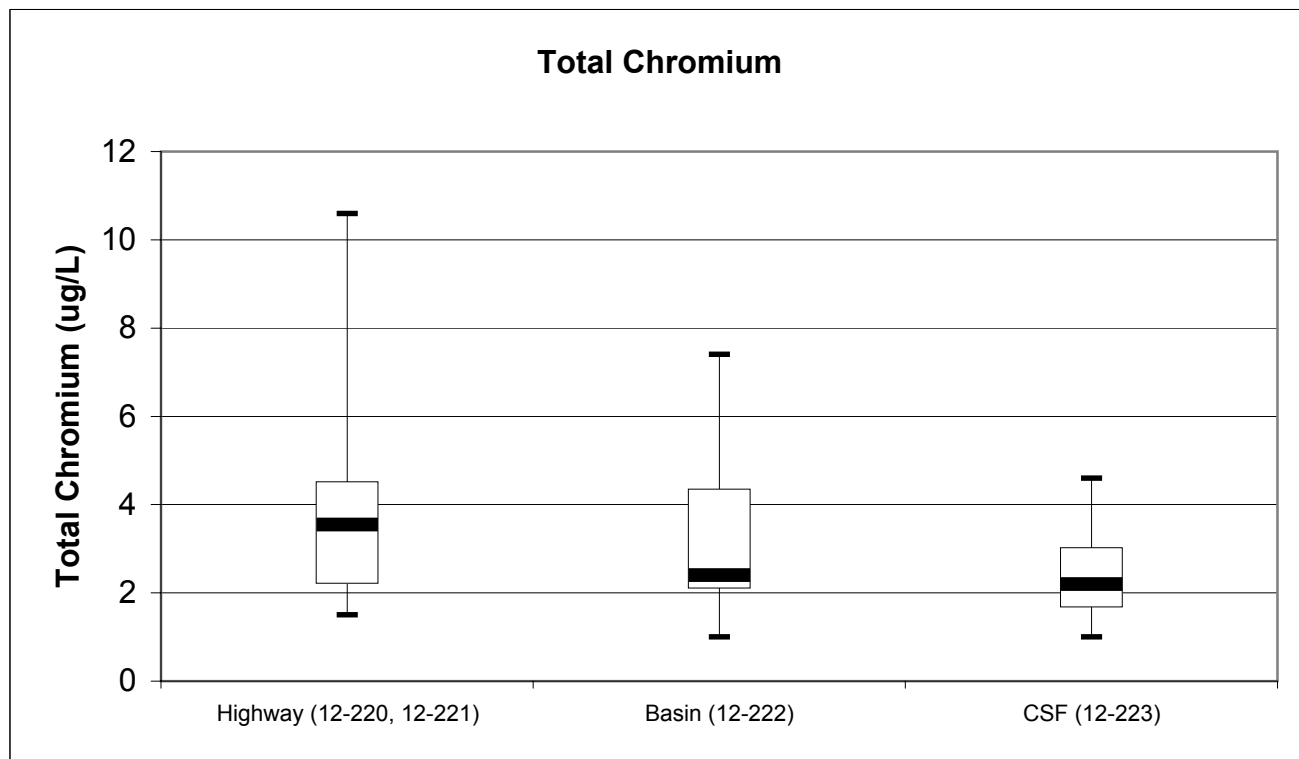


Distribution of Total Dissolved and Suspended Solids  
 CSF System 785L  
 Orange County, California

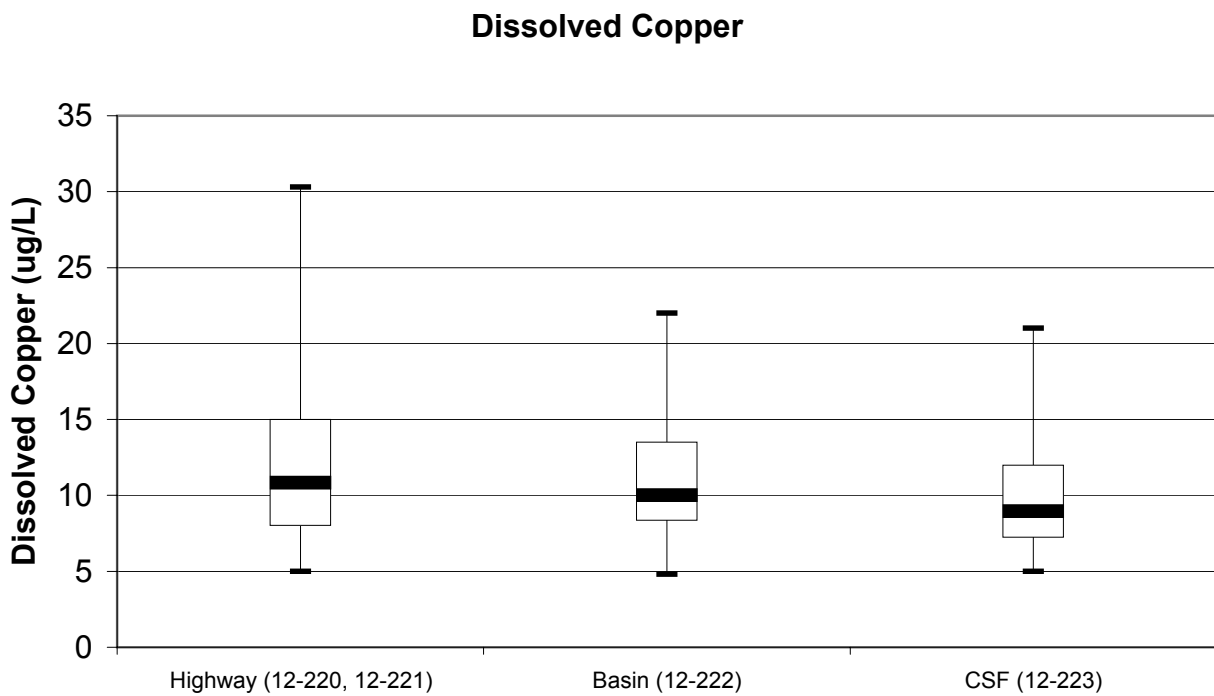
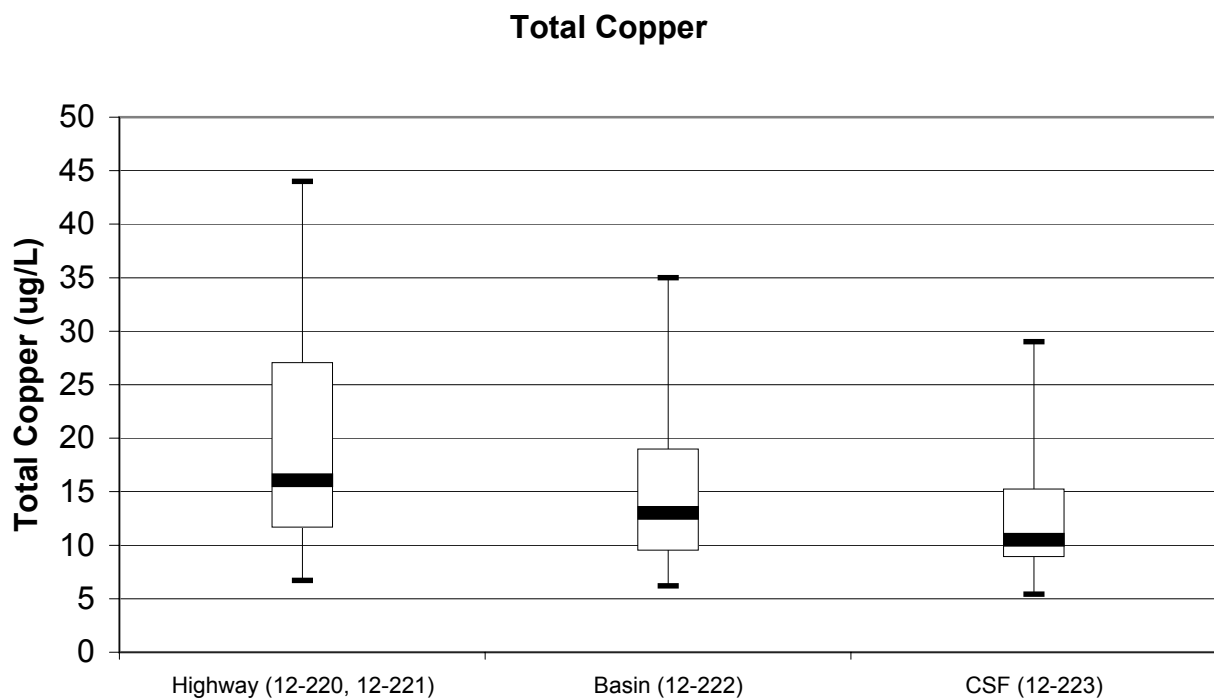
	Figure No.
Date 05/22/02	35



**Distribution of Total and Fecal Coliform**  
 CSF System 785L  
 Orange County, California



Distribution of Total and Dissolved Chromium  
CSF System 785L  
Orange County, California

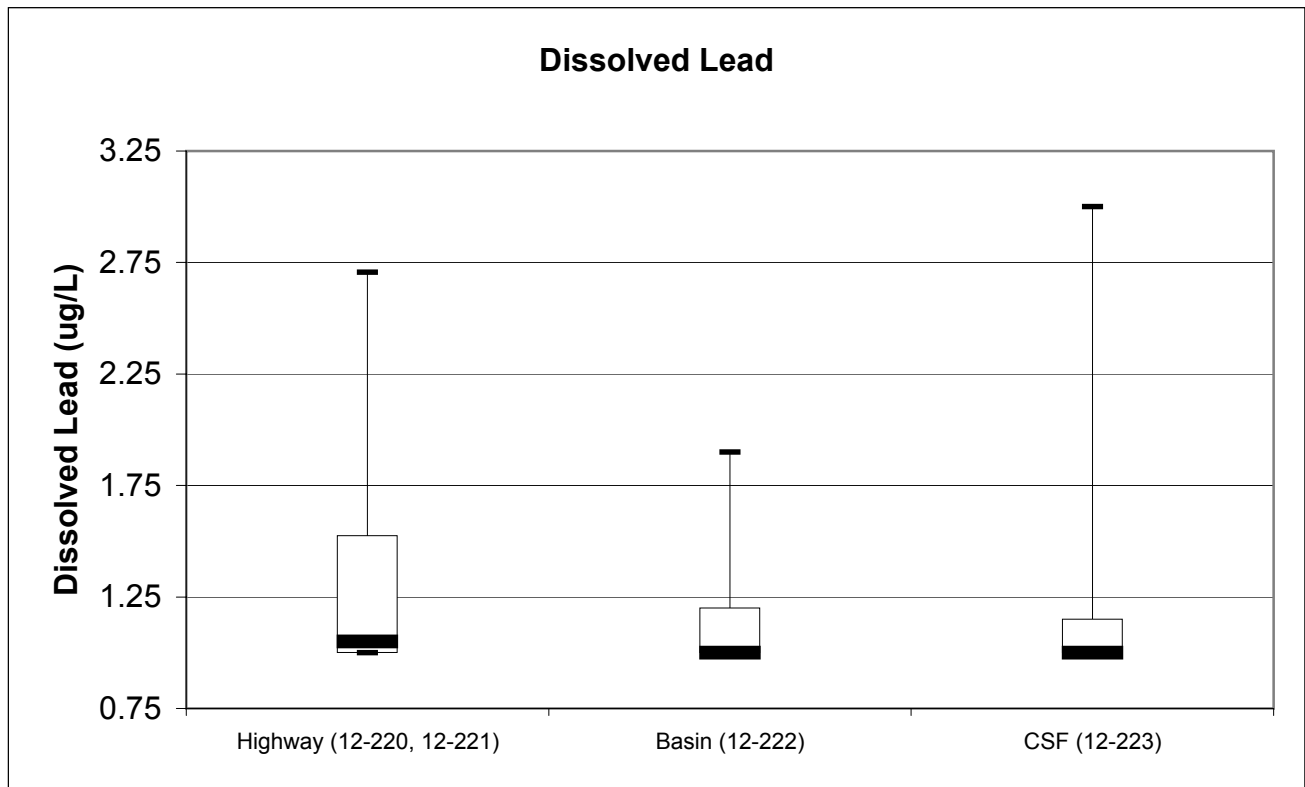
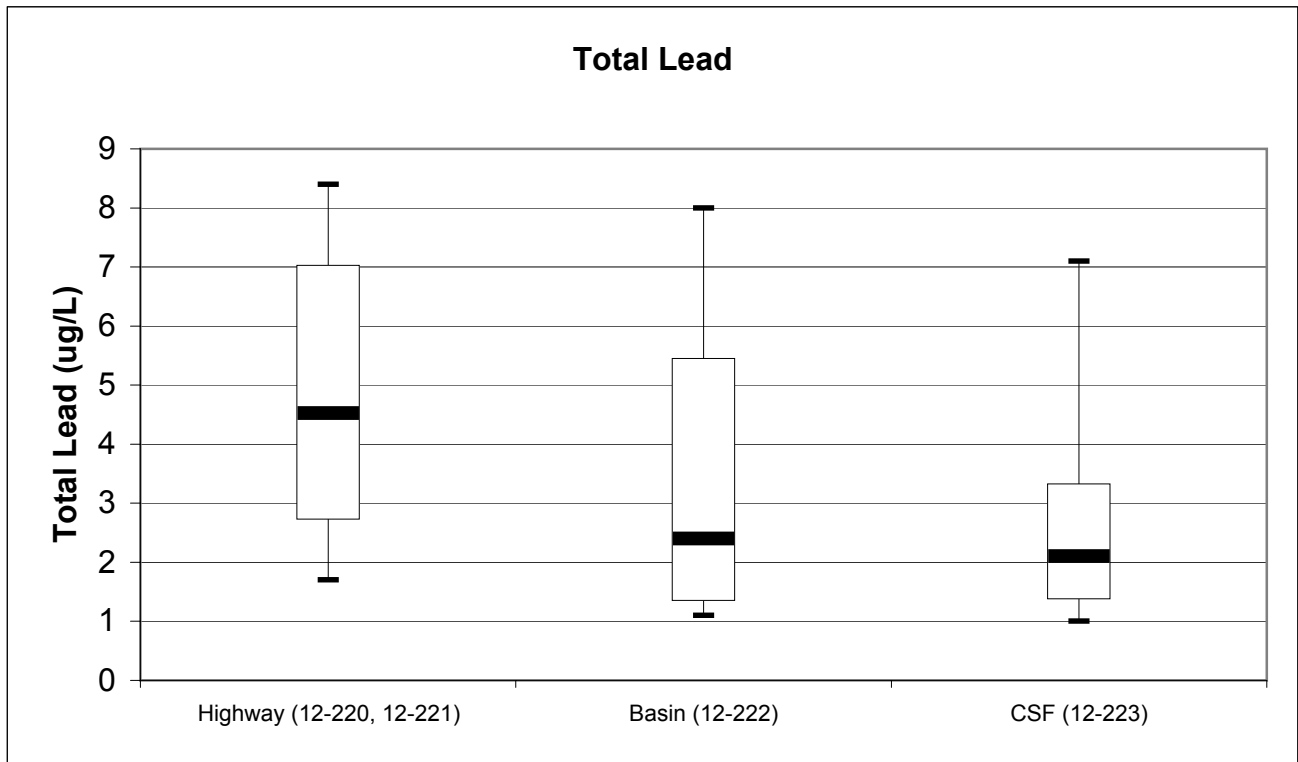


Distribution of Total and Dissolved Copper  
CSF System 785L  
Orange County, California

Date  
05/22/02

Figure No.

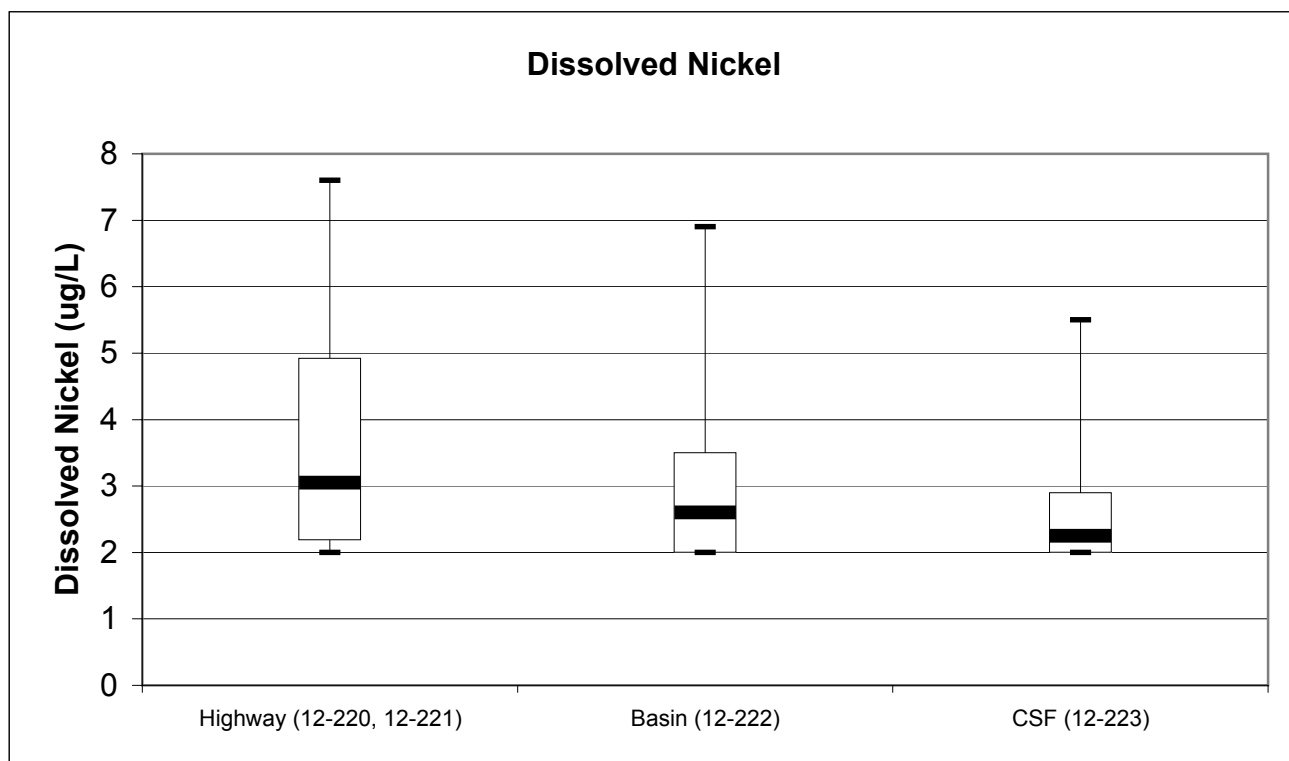
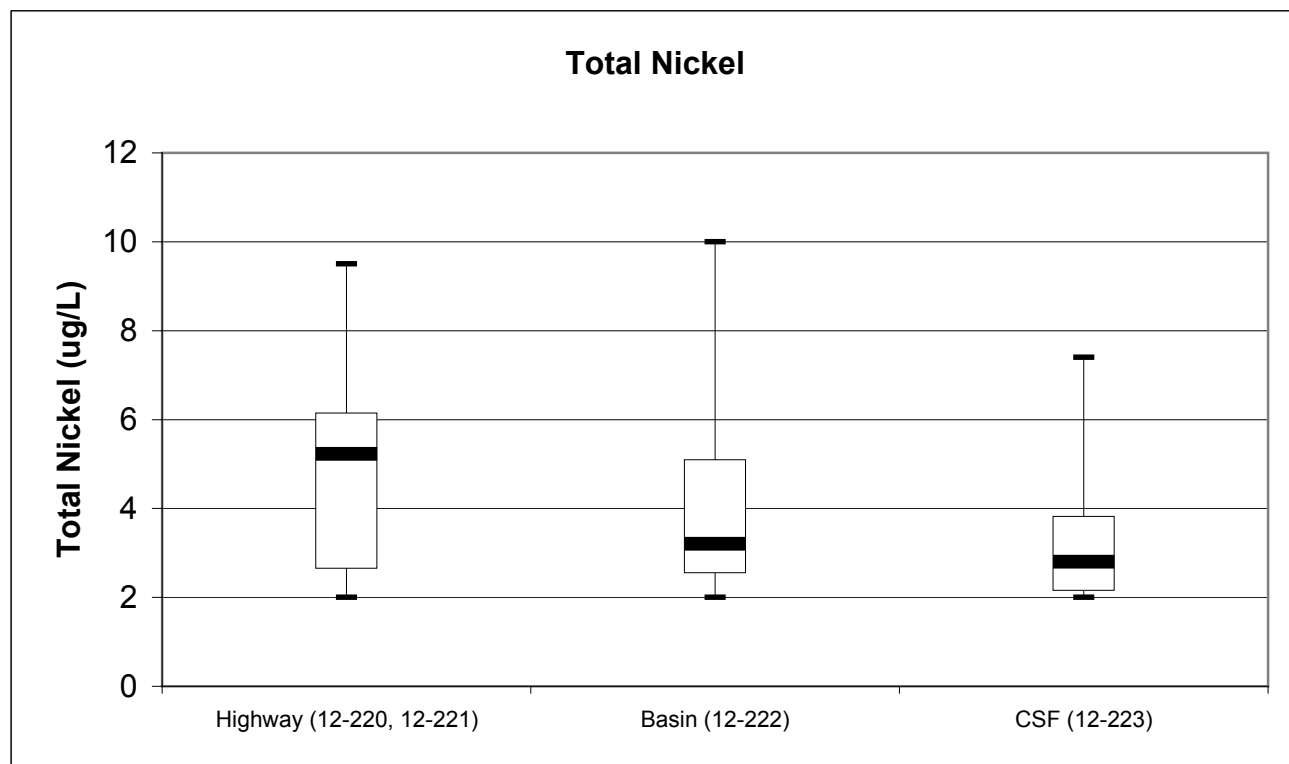
38



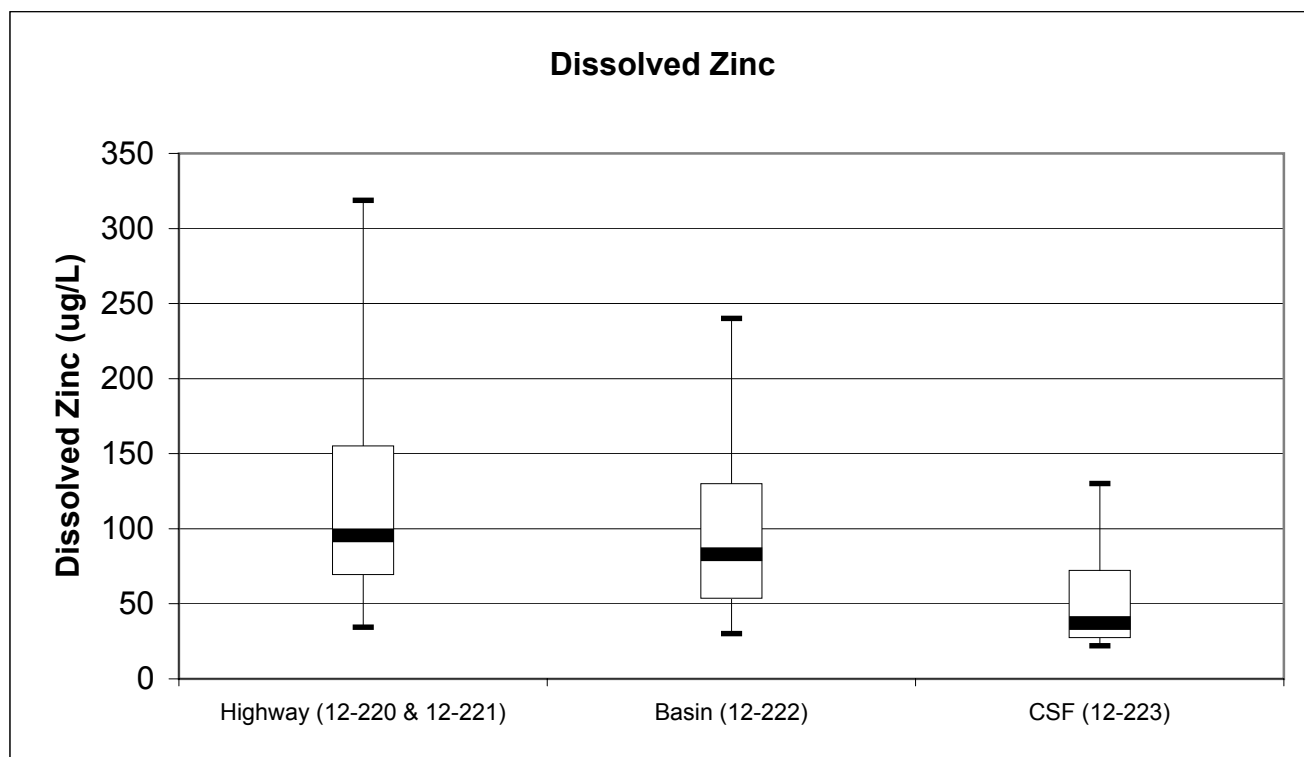
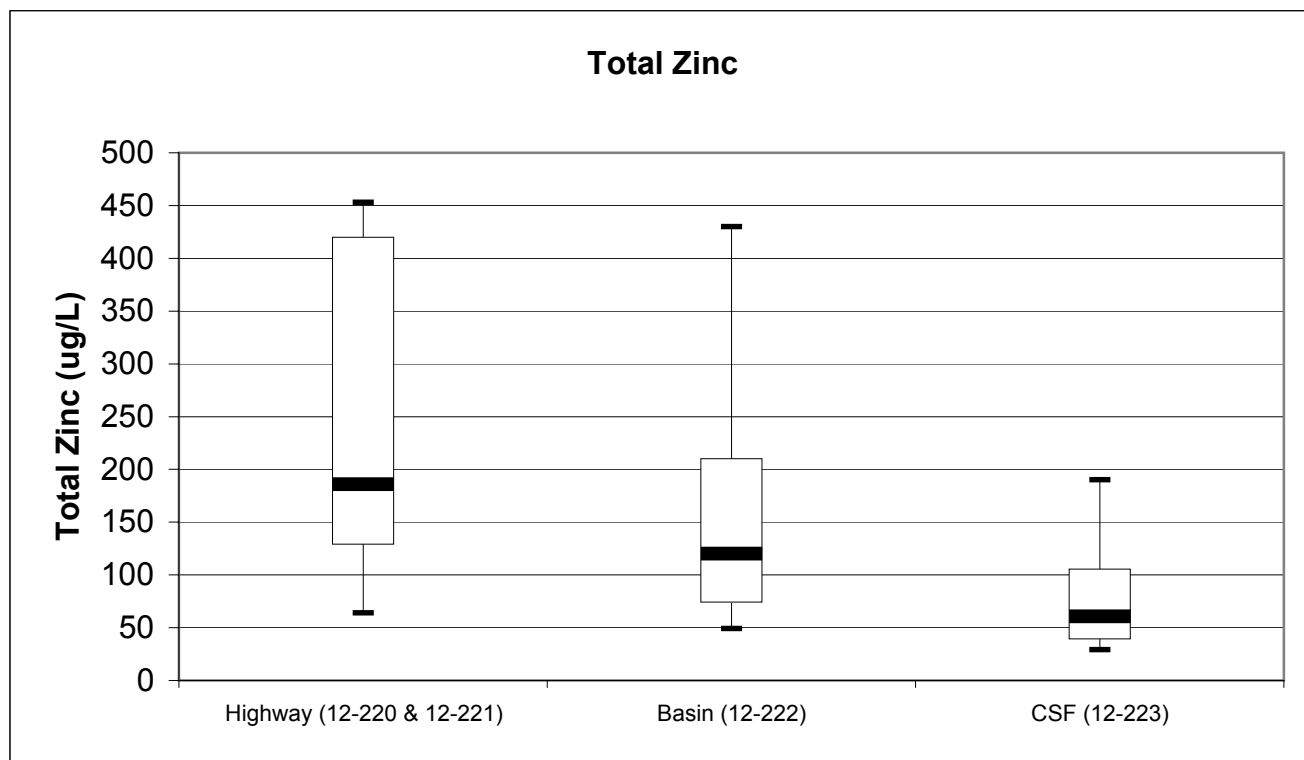
**Distribution of Total and Dissolved Lead**  
 CSF System 785L  
 Orange County, California

Date  
 05/22/02

Figure No.  
**39**



Distribution of Total and Dissolved Nickel  
CSF System 785L  
Orange County, California



**Distribution of Total and Dissolved Zinc**  
 CSF System 785L  
 Orange County, California

# APPENDICES

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**APPENDIX A**  
**CEASE AND DESIST ORDER 2001-198**

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**CEASE AND DESIST ORDER NO. 2001-198**

**CALIFORNIA DEPARTMENT OF TRANSPORTATION**

**San Joaquin Hills Transportation Corridor (SR-73)**

The California Regional Water Quality Control Board, San Diego Region (hereinafter SDRWQCB) finds that:

1. The California Department of Transportation (Caltrans) owns and maintains the San Joaquin Hills Transportation Corridor (SR-73) located in southwest Orange County.
2. Caltrans discharges storm water and non-storm water runoff from the portion of SR-73 located within the San Diego Region; these are discharges regulated by waste discharge requirements currently contained in Order No. 97-08, NPDES No. CAS029998.
3. The State Water Resources Control Board has directed the SDRWQCB to rescind Order No. 97-08 and regulate Caltrans under statewide waste discharge requirements for the discharge of storm water and non-storm water for Caltrans municipal activities (highway systems), industrial activities (maintenance yards), and construction activities (construction projects) contained in Order No. 99-06-DWQ, of the State Water Resources Control Board (NPDES No. CAS000003).
4. The present and threatened violations of SDRWQCB Order No. 97-08 noted in this order are analogous to violations of the newly enforceable SWRCB Order No. 99-06-DWQ. Upon rescission of SDRWQCB Order No. 97-08, Caltrans will be in violation of the provisions of the statewide permit.
5. Caltrans has failed to use reasonable care to properly maintain and operate the twenty Compost Storm Water Filters (CSF units) that were installed along the portion of SR-73 within the jurisdiction of the SDRWQCB as the primary structural best management practice (BMP) for removal of pollutants in storm water runoff.
6. While CSF units can be effective in reducing many targeted pollutants in highway runoff, they require conscientious routine maintenance to function properly. Maintenance and repair of the CSF units including, but not limited to the following is necessary to restore these CSF units to their proper functioning:
  - a. The removal of trash and debris from filter surface and sediment forebay.
  - b. The removal of vegetation growing in compost media.
  - c. The removal of sediment covering compost media to restore a high infiltration capacity.
  - d. The replacement of compost media/ filter material as necessary to restore a high infiltration capacity.
  - e. The removal of trash, debris and excess sediment from sedimentation basins associated with the CSF units.

- f. The repair of any structural failures of the CSF units (e.g. baffles, energy dissipaters).
7. By failing to adequately maintain the twenty CSF units, Caltrans has caused and threatens to cause discharges of pollutants which have not been reduced to the Maximum Extent Practicable (MEP), violating **General Discharge Prohibition A.2** of SDRWQCB Order No. 97-08, and **General Discharge Prohibition A.1** of SWRCB Order No.99-06-DWQ.
8. Due to the lack of adequate maintenance of the CSF units, Caltrans is in violation of **Standard Provision M.5** of SDRWQCB Order No.97-08, and **Provision M.4** of SWRCB Order No.99-06-DWQ. Caltrans has failed to at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by Caltrans to achieve compliance with the conditions of these orders.
9. Due to the lack of adequate maintenance of the CSF units, Caltrans has violated and continues to violate **Storm Water Discharge Specification C.1** of SDRWQCB Order No. 97-08 by failing to implement controls to reduce the discharge of pollutants to the MEP from Caltrans owned right-of-ways to waters of the United States.
10. By failing to adequately maintain the primary treatment BMPs on SR-73 Caltrans threatens to violate **General Discharge Prohibition A.4 of Order No. 97-08** and **General Discharge Prohibition A.3 of Order No. 99-06-DWQ** by potentially contributing to pollution, contamination or nuisance conditions in waters of the United States.
11. In establishing the directives specified in this Cease and Desist Order, this Regional Board considered a report from Caltrans that the CSF units may increase concentrations of nutrients (Nitrates, Nitrites, TKN, total & dissolved phosphorus) in the discharge and may not be an appropriate treatment technology for the SR-73. Further investigation of the CSF units pollutant removal capabilities are needed to ascertain whether the benefits derived from implementation of this treatment device outweigh the possible problems associated with the export of nutrients.
12. The SDRWQCB has notified Caltrans and interested agencies and persons of its intent to issue this Order and has provided them with the opportunity for a public hearing and to submit their written views and recommendations.
13. The SDRWQCB, in a public hearing, heard and considered all comments pertaining to this matter.
14. This enforcement action is being taken for the protection of the environment and, as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED that, pursuant to California Water Code Section 13301, the California Department of Transportation shall cease and desist from violating and threatening to violate RWQCB Order No. 97-08, and SWRCB Order No. 99-06-DWQ and shall comply with the following directives:

A. DIRECTIVES

1. Caltrans shall begin corrective action forthwith on all detention basins and CSF units along SR-73 located within SDRWQCB jurisdiction, to achieve compliance with Order No. 99-06-DWQ.
2. By August 31, 2001, Caltrans shall submit to the SDRWQCB a tentative schedule for the timely completion of the repairs to the detention basins and CSF units, or the replacement of these structures with a suitable alternative treatment BMP, along SR-73 within SDRWQCB jurisdiction.
3. Caltrans shall develop and implement an inspection and maintenance program for all detention basins and CSF units located within SDRWQCB jurisdiction. This inspection and maintenance program will be implemented forthwith. At a minimum all detention basins and CSF units within the jurisdiction of the SDRWQCB shall be inspected monthly. Minor and major maintenance of BMPs shall be performed as needed to ensure their proper functioning. All inspection and maintenance activities shall be documented.
4. By October 30, 2001, Caltrans shall submit a water quality monitoring plan to this Regional Board that satisfies the following requirements:
  - a. Determine the quality of highway runoff from SR-73.
  - b. Determine the ability of the CSF units & detention basins to remove pollutants of concern from runoff from SR-73.
  - c. Determine if the CSF units are contributing excess nutrients, resulting in the impairment of water quality and beneficial uses of receiving waters associated with SR-73.

At a minimum, the plan shall include the monitoring of influent and effluent discharges from CSF units within the jurisdiction of the SDRWQCB. The influent and effluent from the CSF units shall be monitored for but not limited to chromium, copper, lead, nickel, zinc, total dissolved solids, total suspended solids, nitrates, nitrites, total kjeldahl nitrogen, ammonia, total & dissolved phosphorus, oil & grease, total polycyclic aromatic hydrocarbons, fecal coliform, and total coliform. This plan will provide the location of each monitoring site, and the frequency of sampling events. The location of the monitoring sites will include sites within hydrologic sub areas 901.13 (Aliso Creek), 901.21(Oso Creek), and 901.12 (Laguna Canyon). Monitoring will continue until such a time that this Order is rescinded. Annual monitoring reports with the analysis results shall be submitted to the Regional Board.

5. Caltrans shall submit quarterly progress reports which will include:
  - a. A discussion of all tasks undertaken during the quarter to achieve compliance with the Directives of this Order.

- b. Documentation of the progress of all repairs to detention basins and CSF units along SR-73 within the jurisdiction of the SDRWQCB.
- c. A description of all maintenance and inspection activities associated with the detention basins and CSF units along SR-73 within the jurisdiction of the SDRWQCB.

The quarterly reports shall be submitted according to the following schedule:

REPORT PERIOD	REPORT DUE
April - June	July 31
July - September	October 31
October - December	January 31
January - March	April 30

B. PROVISIONS

1. Nothing in this Order shall be construed to relieve the California Department of Transportation from further enforcement action, including administrative or judicial assessment of civil liability, injunctive relief, or criminal prosecution, resulting from violations of SDRWCB Order No. 97-08, and SWRCB Order No. 99-06-DWQ.
2. The California Department of Transportation shall submit reports required under this Order to:

Northern Region Watershed Protection Unit  
California Regional Water Quality Control Board  
San Diego Region  
9771 Clairemont Mesa Boulevard, Suite A  
San Diego, CA 92124

*I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Board, San Diego Region, on July 18, 2001.*

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JOHN H. ROBERTUS  
Executive Officer

# **APPENDIX B**

## **RECEIVING WATER OBSERVATION FORMS**

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**RECEIVING WATER OBSERVATION FORMS**  
**2001-2002**

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RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC/ST.		CSF System: 506R
Date: 12/20/01	Stream Channel: Oso Creek Channel	
Time of Observation: 12:00 P.M.		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No visual surface film, small algae coverage along bottom, lots of plant growth throughout upstream portion.
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	No visual surface film, algae along bottom.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	No visual surface film.
	% Coverage <sup>1</sup>	Not applicable.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	Foam, organic film, feathers.
	% Coverage <sup>1</sup>	Evenly distributed, 30% surface coverage.
Downstream	Description	Feathers, organic film, some foam.
	% Coverage <sup>1</sup>	Thinly dispersed, evenly distributed.
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low overall, very low flow along our discharge side.	
Downstream	Low, no eddies.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	50% exposed rock and plant covering, lots of exposed rock, low water level, lots of plant growth. Stream passes through rip rap prior to entering area where CSF outfall discharges.	
Discharge Point	Rocky bottom, no scouring, green and brown algal cover along bottom. There is a second outfall located on opposite stream bank, just downstream from the CSF outfall.	
Downstream	Rocky bottom, undisturbed, algal growth along bottom, sediment deposition, grass and water plant growth along stream bank.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

Note: Rocks located between discharge point and upstream segments are covered with green algae.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC / BS		CSF System: 604R
Date: 12/19/01		Stream Channel: Aliso Creek
Time of Observation: 4:50 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear – low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Clear
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Sandy substrate, sediment deposition, brown algae growing on substrate. No substrate scarification, minimal trash and debris (i.e., cigarette butts and leaves). Grasses and water plants growing along stream bank.	
Discharge Point	Sandy substrate, no scarification.	
Downstream	Sandy sediment deposition, no scarification, grasses and water plants growing in channel.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not determined. Not safely accessible.	
Discharge Point	Not determined. Not safely accessible.	
Downstream	Musty	

<sup>1</sup> Percent coverage will be estimated by visual observation.

Note: Minimal foaming on south facing side of bridge due to turbulence from water flow over rip-rap.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC/BS		CSF System: 785L
Date: 12/19/01		Stream Channel: Laguna Canyon Creek
Time of Observation: 3:05 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Predominantly water plants overlain with dead (brown) vegetation (grass).
	% Coverage <sup>1</sup>	60-70% (small) tree saplings.
Discharge Point	Description	Dense growth of under brush /saplings; no periphyton growth in standing pools.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Dense growth of brush / saplings; no periphyton growth in standing pools.
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	The standing pools of water are clear.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	The standing pools of water are clear.
	% Coverage <sup>1</sup>	100%
Downstream	Description	The standing pools of water are clear.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Small water plants and dead vegetation.
	% Coverage <sup>1</sup>	Unable to determine, vegetation (dead and growing) dominated the stream segment.
Discharge Point	Description	One pool had a slight sheen closest to discharge point (i.e., outfall).
	% Coverage <sup>1</sup>	Unable to determine, vegetation (dead and growing) dominated the stream segment.
Downstream	Description	Entire area is densely covered with overgrowth. Plant debris covers the standing pools of water, which are very small.
	% Coverage <sup>1</sup>	The pools of water are very small, and do not accurately represent the conditions of the stream segment, which is mostly dry.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	None. Small pools of standing water sparsely distributed throughout stream segment.	
Discharge Point	None. Small pools of standing water sparsely distributed throughout stream segment.	
Downstream	None. Small pools of standing water sparsely distributed stream segment.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Relatively dense coverage of dead grass, tree saplings and scrub brush underlain by patches of new growth.	
Discharge Point	Entire area covered by thick growth of brush and saplings and by layers of dead vegetation.	
Downstream	Same as above.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

Note: Discharge point and downstream area is characterized by very dense vegetation (i.e., brush and saplings and dead vegetation) with small pools of sparsely spaced stagnant water.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 12/28/01		Stream Channel: Oso Creek Channel
Time of Observation: 4:00 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	35% coverage with long grasses. No algal growth detected.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	8% coverage with grasses. No algal growth detected.
Downstream	Description	None
	% Coverage <sup>1</sup>	15% coverage with grasses. No algal growth detected.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear
	% Coverage <sup>1</sup>	100%
Downstream	Description	Clear
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	No foam / froth, no oil / grease, no organic debris, no coated objects.
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low to medium flow. Calm/ laminar flow with exception of area with exposed rocks (5-10%).	
Discharge Point	Low to medium flow.	
Downstream	Low to medium flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	No evidence of erosion, deposition, sedimentation, etc.	
Discharge Point	Same as above.	
Downstream	Same as above.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	Not accessible.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 12/28/01		Stream Channel: Aliso Creek
Time of Observation: 3:21 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small area with algal film covering rocks.
	% Coverage <sup>1</sup>	3%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear
	% Coverage <sup>1</sup>	100%
Downstream	Description	Clear
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Small % of foam, no oil / grease sheen, scattered leaves floating on water, no other floating material within segment of stream.
	% Coverage <sup>1</sup>	1% foam /froth.
Discharge Point	Description	No floating materials besides a few scattered leaves.
	% Coverage <sup>1</sup>	5%
Downstream	Description	No floating materials besides a few scattered leaves.
	% Coverage <sup>1</sup>	5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low to medium flow. Calm / laminar with exception of area with rock (5-10% slightly turbulent).	
Discharge Point	Low to medium flow calm / laminar.	
Downstream	Low to medium flow calm / laminar.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	No evidence of sedimentation or deposition of large debris, no trash or erosion. Straight channel with fine sediment / concrete channel at this segment of the channel.	
Discharge Point	Same as above. Slight meander to channel. Some sedimentation along channel segment. Sediment is fine, sandy material.	
Downstream	Same as discharge point.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not determined. (Stream bank not safely accessible).	
Discharge Point	Musty (odor observed at a distanced from stream bank).	
Downstream	Musty	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 12/28/01		Stream Channel: Laguna Canyon Creek
Time of Observation: 12:06		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Bright green algal film observed on some of the standing pools of water. Most of the entire upstream segment is covered by a brownish weed grass.
	% Coverage <sup>1</sup>	70%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	There are a few small pools of standing water sparsely distributed throughout the segment. These pools are clear.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	There are a few small pools of standing water sparsely distributed throughout the segment. These pools are clear.
	% Coverage <sup>1</sup>	100%
Downstream	Description	There are a few small pools of standing water sparsely distributed throughout the segment. These pools are clear.
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow	
Discharge Point	No flow	
Downstream	No flow	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete lining exposed in a few areas. A thick covering of grass, trees saplings and weeds dominate the upstream segment.	
Discharge Point	Thick weeds, tall grasses and dead vegetation dominate the stream segment.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System: 506R
Date: 1/25/02		Stream Channel: Oso Creek Channel
Time of Observation: 5:10 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low and clear.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Foam aggregates from water spilling over rip-rap.
	% Coverage <sup>1</sup>	Not determined.
Discharge Point	Description	Foam aggregates from water spilling over (upstream) at rip-rap.
	% Coverage <sup>1</sup>	Not determined.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Trickle from CSF outfall. (Source of trickle unknown, contribution to drainage system between CSF and discharge point.)	
Downstream	Low	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Algal growth on substrate. Grass, water plants, other vegetation growing throughout channel.	
Discharge Point	Algal growth on substrate. No algal growth at outfall discharge point with no evidence of sediment deposition.	
Downstream	Rocky substrate, algal growth on rocks $\approx$ 35% to 40% of channel bank covered with grass and water plants.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System: 604R
Date: 01/25/02		Stream Channel: Aliso Creek
Time of Observation: 4:30 P.M.		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	Not observed.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	Not observed.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Not observed.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris; froth.
	% Coverage <sup>1</sup>	< 1%
Discharge Point	Description	Not observed.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Not observed.	
Downstream	Very low, (very low water level).	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Brown algal growth on substrate, sediment deposition, no scarification.	
Discharge Point	Not observed.	
Downstream	Sandy substrate, tall grass.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not determined, (stream bank not safely accessible).	
Discharge Point	Not observed.	
Downstream	None	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

Note: Unable to access discharge observation point.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System: 785L
Date: 01/25/02		Stream Channel: Laguna Canyon Creek
Time of Observation: 3:45 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Relatively thick mats of light to dark green algae.
	% Coverage <sup>1</sup>	Approximately 35% of entire area observed growing on shallow pools of standing water.
Discharge Point	Description	Slight algal film on standing pool of water.
	% Coverage <sup>1</sup>	Unable to accurately assess total coverage due to thick undergrowth.
Downstream	Description	Slight algal film on standing pool of water.
	% Coverage <sup>1</sup>	Unable to accurately assess total coverage due to thick undergrowth.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100% of standing pools observed.
Discharge Point	Description	Clear to low.
	% Coverage <sup>1</sup>	100% of standing pools observed.
Downstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Algae and organic debris; slight organic film.
	% Coverage <sup>1</sup>	Unable to accurately assess total coverage due to thick undergrowth.
Discharge Point	Description	Algae and organic debris.
	% Coverage <sup>1</sup>	Unable to accurately assess total coverage due to thick undergrowth.
Downstream	Description	Algae and organic debris.
	% Coverage <sup>1</sup>	Unable to accurately assess total coverage due to thick undergrowth.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	None	
Discharge Point	None	
Downstream	None	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete lining exposed in some areas, dead vegetation throughout section, ~ 40-45%.	
Discharge Point	Thick undergrowth (grasses/weeds/brush), dead vegetation.	
Downstream	Thick undergrowth (grasses/weeds/brush), dead vegetation.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinguishable odors.	
Discharge Point	No distinguishable odors.	
Downstream	No distinguishable odors.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 02/05/02		Stream Channel: Oso Creek Channel
Time of Observation: 11:30 A.M.		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris, foam passing rocks.
	% Coverage <sup>1</sup>	<1%
Discharge Point	Description	Some foam as it passes rocks from upstream.
	% Coverage <sup>1</sup>	<1%
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low (discharge from outfall is a trickle). Source of flow is not from the CSF, and is unknown.	
Downstream	Low	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with grasses, water plants and rocky substrate.	
Discharge Point	Algal growth at outfall discharge point, which shows no sediment deposition.	
Downstream	Brown algae growing on rocky substrate. Grasses and water plants growing along stream bank.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not determined. Not accessible.	
Discharge Point	Not determined. Not accessible.	
Downstream	Not determined. Not accessible.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 02/05/02		Stream Channel: Aliso Creek
Time of Observation: 10:30 A.M.		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Brownish algal film, slight greenish algal film on rocks.
	% Coverage <sup>1</sup>	10-15%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear to low.
	% Coverage <sup>1</sup>	Not determined – limited visibility due to overgrown vegetation.
Downstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris and foam.
	% Coverage <sup>1</sup>	Foam ~ 5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	Not determined – limited visibility due to overgrown vegetation.
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	~5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low to medium and slightly turbulent.	
Discharge Point	Low to medium flow calm / laminar.	
Downstream	Low calm / laminar.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	No scarification, brown algae growing on substrate.	
Discharge Point	Sandy substrate, no evidence of sedimentation, some trash, no scarification.	
Downstream	Sandy substrate, tall grasses and water plants growing in channel.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not determined, (stream bank not safely accessible).	
Discharge Point	Not determined, (stream bank not safely accessible).	
Downstream	Musty	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 02/05/02		Stream Channel: Laguna Canyon Creek
Time of Observation: 9:50 A.M.		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Algae observed on standing pools of water.
	% Coverage <sup>1</sup>	Approximately 35% of segment is comprised of shallow pools of standing water, which are covered with algae.
Discharge Point	Description	Slight algal film observed on a standing pool of water.
	% Coverage <sup>1</sup>	Unable to determine. The stream segment was overgrown with thick underbrush
Downstream	Description	Slight algal film observed on a standing pool of water.
	% Coverage <sup>1</sup>	Unable to determine. The stream segment was overgrown with thick underbrush.
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight discoloration.
	% Coverage <sup>1</sup>	~10%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear
	% Coverage <sup>1</sup>	100% (The observed standing water appeared to be clear).
Downstream	Description	Clear
	% Coverage <sup>1</sup>	100% (The observed standing water appeared to be clear).
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	Not determined.
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	Not determined. The segment was overgrown with thick vegetation.
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	Not determined. The segment was overgrown with thick vegetation.
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow to very low, calm / laminar.	
Discharge Point	None	
Downstream	None	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel covered with dead vegetation and trash (2%). Concrete exposed (15%).	
Discharge Point	Thick undergrowth (Trees, dead vegetation, grasses).	
Downstream	Thick undergrowth (Trees, dead vegetation, grasses).	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: LT / JC		CSF System: 506 R
Date: 03/06/02		Stream Channel: Oso Creek Channel
Time of Observation: 5:05 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low-Medium.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Organic solids / froth / bio scum (slight film).
	% Coverage <sup>1</sup>	~90%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	None	
Downstream	Low	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Rocky substrate overgrown with brown algae. Most of grasses and water plants within channel are dead or dying.	
Discharge Point	Algal growth at discharge point.	
Downstream	Substrate overgrown with brown algae. Grasses and water plants growing along stream bank.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: LT / JC		CSF System: 604 R
Date: 03/06/02		Stream Channel: Aliso Creek
Time of Observation: 4:22 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100 %
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	Not determined – Limited visibility due to overgrown vegetation.
Downstream	Description	Low
	% Coverage <sup>1</sup>	100 %
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Bubbles, froth, biofilm.
	% Coverage <sup>1</sup>	~ 10 %
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Brown algal growth on substrate, no scouring, grasses and water plants growing along stream bank.	
Discharge Point	Sandy substrate, no scouring.	
Downstream	Sandy substrate, grass and water plants growing in channel.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	Not determined, (stream bank not safely accessible).	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: LT / JC		CSF System: 785 L
Date: 03/06/02		Stream Channel: Laguna Canyon Creek
Time of Observation: 3:48 P.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Thick mats of light – dark green algae at areas with standing water.
	% Coverage <sup>1</sup>	< 20 % of entire stream segment.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable (no water).
Downstream	Description	Green algae observed on standing water in the trench.
	% Coverage <sup>1</sup>	100 % of the standing water.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable (no water).
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low – Represents the pooled standing water.
	% Coverage <sup>1</sup>	10% of entire segment.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable (no water).
Downstream	Description	Low – Represents observation of trenched standing water.
	% Coverage <sup>1</sup>	100% of the standing water.
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Algae observed in standing pools of water.
	% Coverage <sup>1</sup>	<10% of entire segment.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable (no water).
Downstream	Description	Low
	% Coverage <sup>1</sup>	100% of standing water in trench.
<b>Flow:</b> High, medium, low, Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	None	
Discharge Point	Not applicable (no water).	
Downstream	None	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Weeds / grasses cover ~ 80 % of area. Standing water visible in pools.	
Discharge Point	No water observed.	
Downstream	Standing water in channel. Unlined flood plain dominated by dead, weeds and grasses.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	Not applicable (no water).	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

Note: Percent coverage refers to standing water unless otherwise indicated.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System: 506 R
Date: 3/17/02		Stream Channel: Oso Creek Channel
Time of Observation: 9:22 A. M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Little growth along exposed rocks.
	% Coverage <sup>1</sup>	Not determined.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100 %
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100 %
Downstream	Description	Low
	% Coverage <sup>1</sup>	100 %
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Sparse bubbles, organic debris.
	% Coverage <sup>1</sup>	<1%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Sparse bubbles, organic debris.
	% Coverage <sup>1</sup>	<1%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Very low.	
Discharge Point	Very low flow from outfall located at opposite stream bank.	
Downstream	Very low.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Rocky substrate with grass and weed patches (some dead). Some algal growth on rock substrate.	
Discharge Point	Algae growth at outfall discharge point. No sedimentation.	
Downstream	Rocky substrate with algal coverage. Stream bank vegetation still present.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

Note: Stream water level is lowest since first observed.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System: 604R
Date: 03/17/02		Stream Channel: Aliso Creek
Time of Observation: 8:46 A.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slightly green due to substrate (green algal growth on substrate).
	% Coverage <sup>1</sup>	~ 50%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	Not determined – Limited visibility due to overgrown vegetation.
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Bubbles, froth, trash, dead organic debris primarily accumulating along eastern stream bank, south of Aliso and Woods Canyon Bridge.
	% Coverage <sup>1</sup>	60 - 70%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Sedimentation and debris deposition, no scarification, brown algal growth on substrate.	
Discharge Point	Sedimentation, sandy substrate, no scouring.	
Downstream	Sedimentation, sandy substrate, grasses and water plants growing in substrate.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	Not determined, (stream bank not safely accessible).	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: JC		CSF System:785L
Date:03/17/02		Stream Channel: Laguna Canyon Creek
Time of Observation: 8:14 A.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Thick mats of brown / green algal in growth areas around the standing pools.
	% Coverage <sup>1</sup>	~ 15% of total observed area.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Not applicable (no water).
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Not applicable (no water).
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100% of standing water.
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100% of standing water.
Downstream	Description	Not applicable (no water).
	% Coverage <sup>1</sup>	Not applicable.
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris, living and dead vegetation matter.
	% Coverage <sup>1</sup>	~ 50% of total area is covered with debris.
Discharge Point	Description	Organic debris (living and dead vegetation matter).
	% Coverage <sup>1</sup>	≤ 25% of total area is covered with debris.
Downstream	Description	Not applicable (no water).
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	None	
Discharge Point	None	
Downstream	Not applicable (no water).	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete substrate with sediment deposits approximately 70-75% of monitoring area overgrown with weeds and grasses; half of which are dead. Standing water covers approximately 50% of total area.	
Discharge Point	Standing water in small unlined trench overgrown with vegetation.	
Downstream	No water observed.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	Not applicable (no water).	

<sup>1</sup> Percent coverage will be estimated by visual observation.

NOTE: More standing water observed from last inspection. No water was observed at downstream observation point. Percent coverage refers to standing water unless otherwise indicated.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System:506R
Date:4/12/02		Stream Channel: Oso Creek
Time of Observation: 10:00 A.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Yellowish brown algal film.
	% Coverage <sup>1</sup>	< 5%
Discharge Point	Description	Yellowish brown algal film.
	% Coverage <sup>1</sup>	< 5%
Downstream	Description	Yellowish brown algal film.
	% Coverage <sup>1</sup>	< 5%
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Clear to low.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Algal growth and leaves
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Algal growth and leaves, some foam.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Algal growth and leaves, some foam.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low, calm / laminar flow.	
Discharge Point	Low, calm / laminar flow.	
Downstream	Low, calm / laminar flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	No evidence of deposition of large debris, streambed scarification, berm formation, erosion or trash. Some re-growth of streambed vegetation	
Discharge Point	Algal growth at outfall discharge point. No sedimentation.	
Downstream	Stream bank vegetation still present.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible.	
Discharge Point	Not accessible.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 4/12/02		Stream Channel: Aliso Creek
Time of Observation: 9:06 A.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Yellowish brown algal film in low flow areas.
	% Coverage <sup>1</sup>	< 2%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low to clear.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low to clear.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low to clear.
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Presence of foam and leaves.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Trash
	% Coverage <sup>1</sup>	<1%
Downstream	Description	Leaves and trash.
	% Coverage <sup>1</sup>	<1%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low to medium flow (majority of flow is calm / laminar) slightly turbulent.	
Discharge Point	Low to calm / laminar flow.	
Downstream	Low to calm / laminar flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	No evidence of disposition of large debris, streambed scarification, berm formation, erosion or trash, sandy substrate. Grasses and water plants growing along stream bank.	
Discharge Point	Sedimentation, sandy substrate.	
Downstream	Sedimentation, sandy substrate, grasses and water plants growing in channel.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	Not determined (stream bank not safely accessible).	
Downstream	Musty	

1. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 4/12/02		Stream Channel: Laguna Canyon Creek
Time of Observation: 8:15 A.M.		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Yellow / green algal growth on standing water.
	% Coverage <sup>1</sup>	~15%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Clear
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Not applicable.
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	Not applicable.
	% Coverage <sup>1</sup>	Not applicable.
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	No floating objects other than algal growth.
	% Coverage <sup>1</sup>	~15%
Discharge Point	Description	None
	% Coverage <sup>1</sup>	Not applicable.
Downstream	Description	None
	% Coverage <sup>1</sup>	Not applicable.
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Very low to no flow.	
Discharge Point	No flow	
Downstream	No flow	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Area is covered with dead branches, tall grasses and weeds. Small section with standing water with periphyton growth.	
Discharge Point	Area is covered with trees and tall grasses and weeds. No deposition of large debris, streambed scarification, berm formation, erosion or trash.	
Downstream	Same as discharge point.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation.

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RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 10/28/2002		Stream Channel: Oso Creek Channel
Time of Observation: 14:00		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	Approximately 5 - 10%
Discharge Point	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	
Downstream	Description	Low
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	Approximately 25%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations last year), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 10/28/2002		Stream Channel: Aliso Creek Channel
Time of Observation: 14:30		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Algal mats under the bridge and along the concrete. Slight algal film after concrete section.
	% Coverage <sup>1</sup>	Approximately 50% within concrete area and <10% afterward.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Stream not observed; trees and brush prevent visual observations of flow.	
Downstream	Low flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. No evidence of sedimentation, deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Trees and brush within the stream channel prevent any observations of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Downstream	Vegetation and brush along small section of the creek. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to last years observations.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	Musty.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 10/28/2002		Stream Channel: Laguna Canyon Creek
Time of Observation: 15:30		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow.	
Discharge Point	No flow.	
Downstream	No flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with dead branches and a little vegetation. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup>. Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 11/15/2002	Stream Channel: Oso Creek Channel	
Time of Observation: 14:45		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Trash/Organic debris.
	% Coverage <sup>1</sup>	<10%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 11/15/2002		Stream Channel: Aliso Creek Channel
Time of Observation: 14:00		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks
	% Coverage <sup>1</sup>	<5%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	No floating materials observed.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Stream not observed; trees and brush prevent visual observations of flow.	
Downstream	Low flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. Some sedimentation building up after the bridge. No evidence of deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Trees and brush within the stream channel prevent any observations of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Downstream	Vegetation and brush along small section of the creek. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observations.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Sewage smell carrying over from water treatment plant upstream from discharge location.	
Downstream	Musty.	

<sup>1</sup>. Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 11/15/2002		Stream Channel: Laguna Canyon Creek
Time of Observation: 13:20		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow.	
Discharge Point	No flow.	
Downstream	No flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with dead branches and a little vegetation. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 12/15/2002		Stream Channel: Oso Creek Channel
Time of Observation: 12:30		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 12/15/2002	Stream Channel: Aliso Creek Channel	
Time of Observation: 11:10		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks
	% Coverage <sup>1</sup>	<5%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Very Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Very Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	No floating materials observed.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low, Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Stream not observed; trees and brush prevent visual observations of flow.	
Downstream	Very low flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. Some sedimentation building up after the bridge. No evidence of deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Trees and brush within the stream channel prevent any observations of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Downstream	Vegetation and brush along small section of the creek. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observations.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	Musty.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 12/15/2002		Stream Channel: Laguna Canyon Creek
Time of Observation: 12:30		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow.	
Discharge Point	No flow.	
Downstream	No flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with dead branches and a little vegetation. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 1/17/2003	Stream Channel: Oso Creek Channel	
Time of Observation: 15:50		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<10%
Discharge Point	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<10%
Downstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<10%
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight greenish-brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight greenish-brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight greenish-brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Slight foam after discharge from the south end discharge pipe.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low	
Discharge Point	Low	
Downstream	Low	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 1/17/2003	Stream Channel: Aliso Creek Channel	
Time of Observation: 15:30		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks.
	% Coverage <sup>1</sup>	<10%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low, Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Low flow.	
Downstream	Low flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. No evidence of sedimentation, deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Vegetation and trees were removed during the last storm event.	
Downstream	Vegetation and brush along small section of the creek have been removed during the last storm event.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	Musty.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 1/17/2003		Stream Channel: Laguna Canyon Creek
Time of Observation: 14:45		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No water or growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Downstream	Description	N/A (No water observed)
	% Coverage <sup>1</sup>	N/A
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	No flow.	
Discharge Point	No flow.	
Downstream	No flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with dead branches and a little vegetation. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 3/12/2003		Stream Channel: Oso Creek Channel
Time of Observation: 09:15		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Small percent of algal growth
	% Coverage <sup>1</sup>	<5%
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight green discoloration in the water.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris, trash.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low, calm/laminar.	
Discharge Point	Low, calm/laminar.	
Downstream	Low, calm/laminar.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 3/12/2003	Stream Channel: Aliso Creek Channel	
Time of Observation: 09:50		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks
	% Coverage <sup>1</sup>	<5%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	N/A
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Very Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	No floating materials observed.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Stream not observed; trees and brush prevent visual observations of flow.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low, Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Stream not observed; trees and brush prevent visual observations of flow.	
Downstream	Very low flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. Some sedimentation building up after the bridge. No evidence of deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Deposition of large debris (tree branches and vegetation). Overgrowth prevents stream observation.	
Downstream	Deposition of large debris (tree branches and vegetation) and some sedimentation. Vegetation and brush along small section of the creek.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	Musty.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 3/12/2003		Stream Channel: Laguna Canyon Creek
Time of Observation: 10:35		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Discharge Point	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Downstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Very low to no flow.	
Discharge Point	Very low to no flow.	
Downstream	Very low to no flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with a little vegetation. Some sedimentation. No evidence deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 4/2/2003		Stream Channel: Oso Creek Channel
Time of Observation: 13:10		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Large segment of algal film.
	% Coverage <sup>1</sup>	Approximately 40%
Discharge Point	Description	Segment of algal growth
	% Coverage <sup>1</sup>	Approximately 10%
Downstream	Description	Segment of algal growth
	% Coverage <sup>1</sup>	Approximately 10%
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight greenish brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight greenish brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight greenish brown discoloration in the water..
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris, trash, and some foam (<5%).
	% Coverage <sup>1</sup>	Approximately 40%
Discharge Point	Description	Organic debris, trash, and some foam (<5%).
	% Coverage <sup>1</sup>	Approximately 40%
Downstream	Description	Organic debris, trash, and some foam (<5%).
	% Coverage <sup>1</sup>	Approximately 40%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low, calm/laminar.	
Discharge Point	Low, calm/laminar.	
Downstream	Low, calm/laminar.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Same as discharge point.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 4/2/2003		Stream Channel: Aliso Creek Channel
Time of Observation: 14:00		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks
	% Coverage <sup>1</sup>	Approximately 15%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight greenish-brown discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Slight greenish-brown discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Slight greenish-brown discoloration.
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Foam and organic debris.
	% Coverage <sup>1</sup>	Approximately 30%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<10%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<10%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Low/calm/laminar.	
Downstream	Low/calm/laminar.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. Some sedimentation building up after the bridge. No evidence of deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Some sedimentation. Brush and trees removed during the last storm event.	
Downstream	Some sedimentation. Brush and trees removed during the last storm event.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 4/2/2003		Stream Channel: Laguna Canyon Creek
Time of Observation: 14:40		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Discharge Point	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Downstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Very little water. No floating materials.
	% Coverage <sup>1</sup>	N/A
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Very low to no flow.	
Discharge Point	Very low to no flow.	
Downstream	Very low to no flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with a little vegetation. Some sedimentation. No evidence deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 506R
Date: 5/2/2003		Stream Channel: Oso Creek Channel
Time of Observation: 12:30		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight segment of algal film along rocks.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Slight segment of algal film.
	% Coverage <sup>1</sup>	<1%
Downstream	Description	Slight segment of algal film
	% Coverage <sup>1</sup>	Approximately 5%
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Greenish brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Greenish brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
Downstream	Description	Greenish brown discoloration in the water.
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Low
	% Coverage <sup>1</sup>	100%
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Discharge Point	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Low flow.	
Downstream	Low flow.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. Stream passes through rip rap prior to entering area where CSF outfall discharges. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observation), streambed scarification, or berm formation.	
Discharge Point	Concrete Channel with medium sized rocks exposed out of the water within the channel. Rocks are covered with some vegetation. No evidence of sedimentation, deposition of large debris (rocks were there during the previous observations), streambed scarification, or berm formation.	
Downstream	Concrete Channel with medium sized rocks exposed out of the water within the channel and some sedimentation.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor at observation point.	
Discharge Point	Not accessible. No odor at observation point.	
Downstream	Not accessible. No odor at observation point.	

<sup>1</sup>. Percent coverage will be estimated by visual observation.

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 604R
Date: 5/2/2003		Stream Channel: Aliso Creek Channel
Time of Observation: 13:30		
<b>Periphyton Growth:</b> Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	Slight algal film developing around the rocks
	% Coverage <sup>1</sup>	<5%.
Discharge Point	Description	No algal film observed.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Slight algal film observed.
	% Coverage <sup>1</sup>	<1%
<b>Green Discoloration:</b> Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	Slight greenish-brown discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Observation point blocked by tall trees and vegetation.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
<b>Turbidity:</b> Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Low
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	Observation point blocked by tall trees and vegetation.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Low
	% Coverage <sup>1</sup>	100%
<b>Floating Materials:</b> Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Foam and organic debris.
	% Coverage <sup>1</sup>	Approximately 10%
Discharge Point	Description	Observation point blocked by tall trees and vegetation.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Organic debris.
	% Coverage <sup>1</sup>	<5%
<b>Flow:</b> High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Low flow.	
Discharge Point	Low/calm/laminar.	
Downstream	Low/calm/laminar.	
<b>Physical Characteristics:</b> Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete Channel. Some sedimentation building up after the bridge. No evidence of deposition of large debris, streambed scarification, or berm formation.	
Discharge Point	Large debris cleared during the last storm event. Some large trees and vegetation remain blocking the stream channel.	
Downstream	Large debris cleared during the last storm event.	
<b>Odor:</b> Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	Not accessible. No odor observed at observation point.	
Discharge Point	Not accessible. No odor observed at observation point.	
Downstream	Musty.	

<sup>1</sup>. Percent coverage will be estimated by visual observation

RECEIVING WATER MONITORING FORM COMPOST STORM WATER FILTER SYSTEM STUDY		
Sampling Team: BAS		CSF System: 785L
Date: 5/2/2003		Stream Channel: Laguna Canyon Creek
Time of Observation: 14:20		
Periphyton Growth: Describe algal film and percent coverage of surface of the monitored stream segment		
Upstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	No growth within concrete channel.
	% Coverage <sup>1</sup>	N/A
Green Discoloration: Describe green discoloration (if present) and coverage over monitored stream segment		
Upstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Discharge Point	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Downstream	Description	No green discoloration.
	% Coverage <sup>1</sup>	100%
Turbidity: Clear, low, medium, high, and percent of monitored stream segment characterized by observed turbidity		
Upstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Discharge Point	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Downstream	Description	Very little water. The water present is clear.
	% Coverage <sup>1</sup>	
Floating Materials: Describe presence and % coverage of foam/froth, oil/grease sheen, organic debris, emulsion, coated objects, or other materials within the monitored segment of the stream		
Upstream	Description	Very little water. No floating materials. Tadpoles in the pond water.
	% Coverage <sup>1</sup>	N/A
Discharge Point	Description	Very little water. No floating materials. Tadpoles in the pond water.
	% Coverage <sup>1</sup>	N/A
Downstream	Description	Very little water. No floating materials. Tadpoles in the pond water.
	% Coverage <sup>1</sup>	N/A
Flow: High, medium, low. Very turbulent, slightly turbulent, calm/laminar. Size/location of eddies (if any)		
Upstream	Very low to no flow.	
Discharge Point	Very low to no flow.	
Downstream	Very low to no flow.	
Physical Characteristics: Describe evidence of sedimentation, deposition of large debris (e.g., trees/branches), streambed scarification, berm formation, erosion, trash, or other		
Upstream	Concrete channel with some vegetation and sedimentation. No evidence deposition of large debris, streambed scarification, berm formation, erosion, or trash.	
Discharge Point	Concrete channel ends near discharge point. Channel has lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Downstream	Channel with lots vegetation and trees. No evidence of sedimentation, deposition of large debris, streambed scarification, berm formation, erosion, or trash in comparison to the last observation.	
Odor: Describe if none, hydrogen sulfide, musty, sewage, ammonia, hydrocarbon, pesticide/herbicide, or other		
Upstream	No distinct odor.	
Discharge Point	No distinct odor.	
Downstream	No distinct odor.	

<sup>1</sup> Percent coverage will be estimated by visual observation

# APPENDIX C

## QA/QC

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# Data Quality

## C.1 Overview

This appendix summarizes the quality assurance/quality control (QA/QC) procedures that were implemented in the laboratory to ensure that the data collected during the 2001/2002 and 2002/2003 monitoring seasons were of known quality and met the project data quality objectives outlined in the WQMP. A general description of the laboratory QA/QC procedures is discussed in Section C.2. Upon receipt from the laboratory, a complete data quality evaluation was performed on all data generated during this project to ensure that the reported data accurately represented the concentrations of constituents present in the storm water samples.

## C.2 Laboratory Quality Assurance/Quality Control Procedures

Quality assurance is defined as the integrated program designed for assuring reliability of monitoring and measurement of data. Quality control is defined as the routine application of procedures for obtaining prescribed standards of performance in the monitoring and measuring process. This section presents quality control procedures conducted by the laboratory to ensure analytical data quality. A description of the general practices required of the laboratory is summarized below.

### C.2.1 Calibration

Instrument calibration is performed to ensure that the instrument is capable of producing acceptable qualitative and quantitative data for target compounds. Calibration procedures vary by analytical method. In general, each instrument is calibrated initially using certified standards, followed by periodic (i.e., daily) calibration verifications to confirm that the initial calibration is valid.

### C.2.2 Method Blank

A method blank (MB) is a QC sample that consists of all reagents specific to the method and is carried through every aspect of the procedure, including preparation, cleanup and analysis. The MB is used to identify any interferences or contamination of the analytical system that may lead to the reporting of elevated analyte concentrations or false positive data. Potential sources of contamination include solvent, reagents, glassware, or the laboratory environment. The MB is prepared with each group of samples processed. One batch of samples is generally defined as a group of 20 samples or less of the same sample matrix that are processed using the same procedures, reagents and standards within the same time period.

### C.2.3 Equipment Blanks

Equipment blanks were prepared to assess potential contamination from automated samplers and the associated pump tubing. To evaluate potential contamination from equipment, equipment blanks were analyzed at the beginning of the season. Equipment blanks were collected by pumping deionized water through the automated equipment used at each of the monitoring stations. The rinsate was then analyzed for constituents



outlined in the WQMP. Because sample bottles used in this monitoring program are reused, bottle blank analyses were also performed to determine the effectiveness of the bottle cleaning process performed by the laboratory.

#### **C.2.4 Laboratory Control Sample**

A laboratory control sample (LCS) is a laboratory-generated clean matrix sample that is fortified with known concentrations of target analytes. The LCS is then carried along with the environmental samples through the entire sample preparation/analysis sequence. Review of the LCS recovery data is used to monitor the performance of the analytical methods. The results of the LCS, used in conjunction with the matrix spike samples can provide evidence that the laboratory performed the method correctly or the sample matrix affected the results.

#### **C.2.5 Matrix Spike Sample**

Matrix spikes (MS) and matrix spike duplicates (MSDs) are analyzed to evaluate the effect of the sample matrix on the accuracy of the analytical procedures. An MS/MSD is an environmental sample to which known concentrations of target analytes have been added. The spiked sample is then carried through the entire analytical sequence. The analyte concentrations detected during the analysis are compared to the known spike concentrations to obtain a percent recovery for each spiked analyte. The recoveries are compared to acceptance limits and the results are used to evaluate accuracy and the presence of matrix interferences.

The difference between the MS and the MSD analyses is expressed as the relative percent difference (RPD). RPDs are used to evaluate analytical precision and can also be a measure of relative sample heterogeneity.

#### **C.3 Data Quality Evaluation**

Upon receipt from the laboratory, each analytical report was thoroughly reviewed and the data evaluated to determine if the data met the project objectives. Initially, the data were screened for the following major items:

- a 100 percent check between electronic data provided by the laboratory and the hard copy reports;
- conformity check between the chain-of-custody forms, compositing protocol, and laboratory reports;
- a check for laboratory data report completeness; and,
- a check for typographical errors on the laboratory reports.

After performing the aforementioned data screening, the laboratory was notified of any deficiencies by way of a telephone call or through a memorandum detailing the problems encountered during the initial screening process.

Following the initial screening, a more complete QA/QC review process was performed which included an evaluation of method holding times, method and equipment blank



contamination, and accuracy and precision. Accuracy was evaluated by reviewing MS and MSD recoveries; precision was evaluated by reviewing spike duplicate and laboratory sample duplicate RPDs. In addition to manually reviewing the data for the QC elements listed above, all electronic data were checked for compliance with Caltrans-specified accuracy, precision, holding time and reporting limit criteria using Caltrans' Electronic Data Deliverable (EDD) Checker and Automated Data Validation program (November 2001). The following sections describe specific items that were evaluated during the QA/QC review process and data that were qualified as estimated due to laboratory QC exceedances.

### **C.3.1 Holding Times**

A sample holding time is defined as the maximum allowable time a sample can be stored after sample collection and preservation until analysis. For composite samples, the time of the last discrete sample is considered the sample collection time for determining the sample holding time. During the data review process, it was determined that, with the exception of nitrite, nitrate, ortho-phosphate, and pH, all other analyses were performed within their technical holding times. During the 2001/2002 monitoring season only 1 of the 217 samples submitted for analysis for nitrate and dissolved ortho-phosphate, and 2 of the 217 samples submitted for nitrate and pH, were analyzed beyond the maximum allowable holding time of 48 hours. Therefore, these samples were qualified with a "J" or a "UJ", in accordance with Caltrans protocols, to indicate an estimated or an estimated reporting limit as a result of a holding time exceedance. During the 2002/2003 storm water monitoring season none of the 69 samples analyzed were qualified.

### **C.3.2 Blank Evaluation**

As mentioned previously, analytical results from both laboratory method blanks and field equipment blanks were evaluated during the QA/QC review process. Blanks can be used to identify the presence and potential source of sample contamination. If no contamination is present in the blanks, then no further action is required. Laboratory method blanks were analyzed with every batch of samples for most analyses. Additionally, two types of field blanks were collected and analyzed: blanks were collected from the sampling equipment (i.e., the pump tubing) and from the sample bottles, which were analyzed to evaluate the effectiveness of the bottle cleaning procedures performed by the laboratory. For the 2001/2002 storm water monitoring season, all blank evaluation results were less than the reporting limit indicating no potential source of sample contamination. For the 2002/2003 storm water monitoring season, one field blank resulted in detections for DOC and TOC, 1.5 and 2.6 mg/L respectively. The detections resulted in qualifying two samples with a "U" for TOC values that had sample concentrations that were less than 10 times the concentration detected in the field blank. Overall, the deficiencies reported for the TOC analyses were not considered significant enough to reject the data and were used in subsequent statistical analyses.



### C.3.3 Accuracy and Precision

Accuracy is the degree of agreement between a measurement and the true or expected value or between the average of a number of measurements and the true or expected value. Systematic errors affect accuracy. For chemical properties, accuracy is expressed as percent recovery (%R), which is calculated as follows:

$$\%R = [(C_s - C)/S] * 100$$

where:

%R = percent recovery

C<sub>s</sub> = spiked sample concentration

C = background sample concentration

S = concentration equivalent of spike added

MS, MSD and LCS results were checked to assess the accuracy of the analytical process. MS and MSD results provided an evaluation of accuracy in environmental sample matrices; whereas, LCS results provided a measure of accuracy throughout the entire recovery process. Precision is an estimate of variability. In other words, precision is an estimate of agreement among individual measurements of the same physical or chemical property, under prescribed similar conditions. Precision can be calculated as the relative percent difference (RPD) as follows:

$$RPD = 2 * [(S - D)/(S + D)] * 100$$

where:

RPD = relative percent difference

S = concentration measured in original sample

D = concentration measured in duplicate sample

Duplicate sample results were checked to assess the variability between samples. Depending on the analytical method, various types of duplicate results were compared to assess precision. For example, some methods require the analysis of an MS and an MSD sample pair, whereas other methods are not as specific. When not specified, the laboratory calculated precision using a sample and a duplicate of the same sample.

Control limits for spike recoveries and RPDs were defined by the project data quality objectives (DQOs) in the WQMP. These are the acceptance limits that are specified in the EDD Checker and are the limits used to evaluate the usability of the project data. In general, the laboratory performed very well in meeting the control limits defined by the DQOs. For the 2001-2002 monitoring season, the only QC deficiencies noted were related to MS and/or MSD samples analyzed for DOC. One batch of samples had MS and MSD relative percent difference above the acceptance criteria of 15 percent (the RPD was 18 percent). Results from 7 of the 108 samples analyzed for DOC were flagged with "J" to indicate estimated concentrations as a result of MS and MSD exceedances. Overall, the QC deficiencies reported during the DOC analyses were not considered significant enough to reject the data and were used in subsequent statistical analyses. For



the 2002-2003 monitoring season, no QC deficiencies were noted for MS and/or MSD samples.

#### **C.3.4 Evaluation of Hydrologic Coverage and Flow Data**

The final data screening procedure included an evaluation of each storm event in terms of hydrologic data and sample coverage to ensure the resulting analytical results represented EMCs. As part of this evaluation, hydrographs were created with sample collection times, rainfall, and grab sample collection information (refer to Appendix D). The hydrographs were carefully reviewed to verify they met project criteria for sample representativeness as outlined in the WQMP.

#### **C.3.5 Data Evaluation Summary**

In general, the QA/QC review of analytical results found all the data to be of acceptable quality and usable for the intended purposes, including sample data qualified as estimated due to slight laboratory QC deficiencies or holding time exceedances. None of the data were rejected for use on the basis of laboratory method deficiencies. Results of this evaluation indicated that all the data were considered acceptable and were used in final data analyses. The evaluation of the hydrologic data provided an assessment of the representativeness of sampling events. Based on the evaluation of hydrologic data, all data used in the final data analysis were considered representative.

## **APPENDIX D**

### **HYDROGRAPHS**

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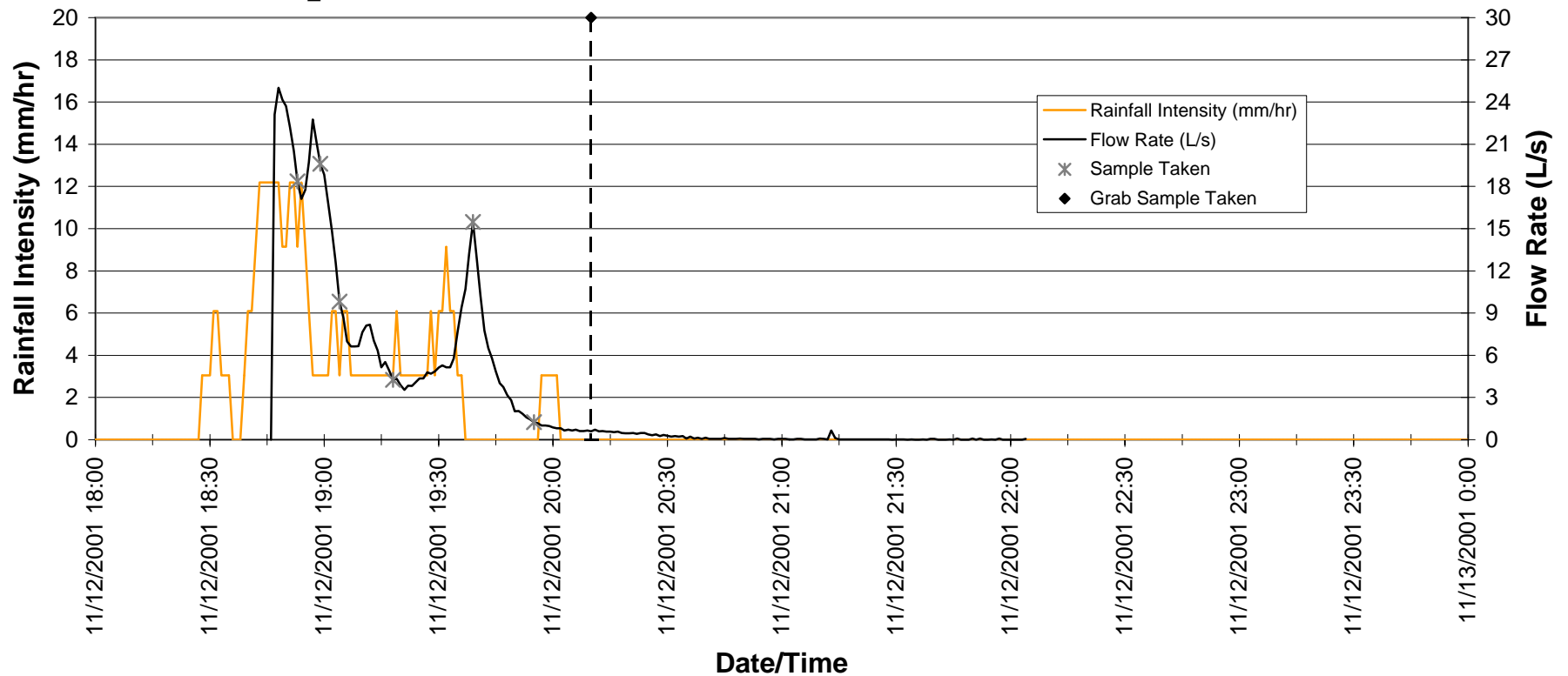
## **HYDROGRAPHS 2001-2002**

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## Event Summary

Site: 506R (12-210)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/12/01 18:28  
Stop Date/Time: 11/12/01 19:57  
Event Rain (mm): 6.35  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 11/12/01 18:47  
Stop Date/Time: 11/12/01 22:04  
Total Flow Volume (L): 39418  
Peak Flow (L/s): 25.02  
Observed Runoff Coefficient: 0.227

### Sample Data

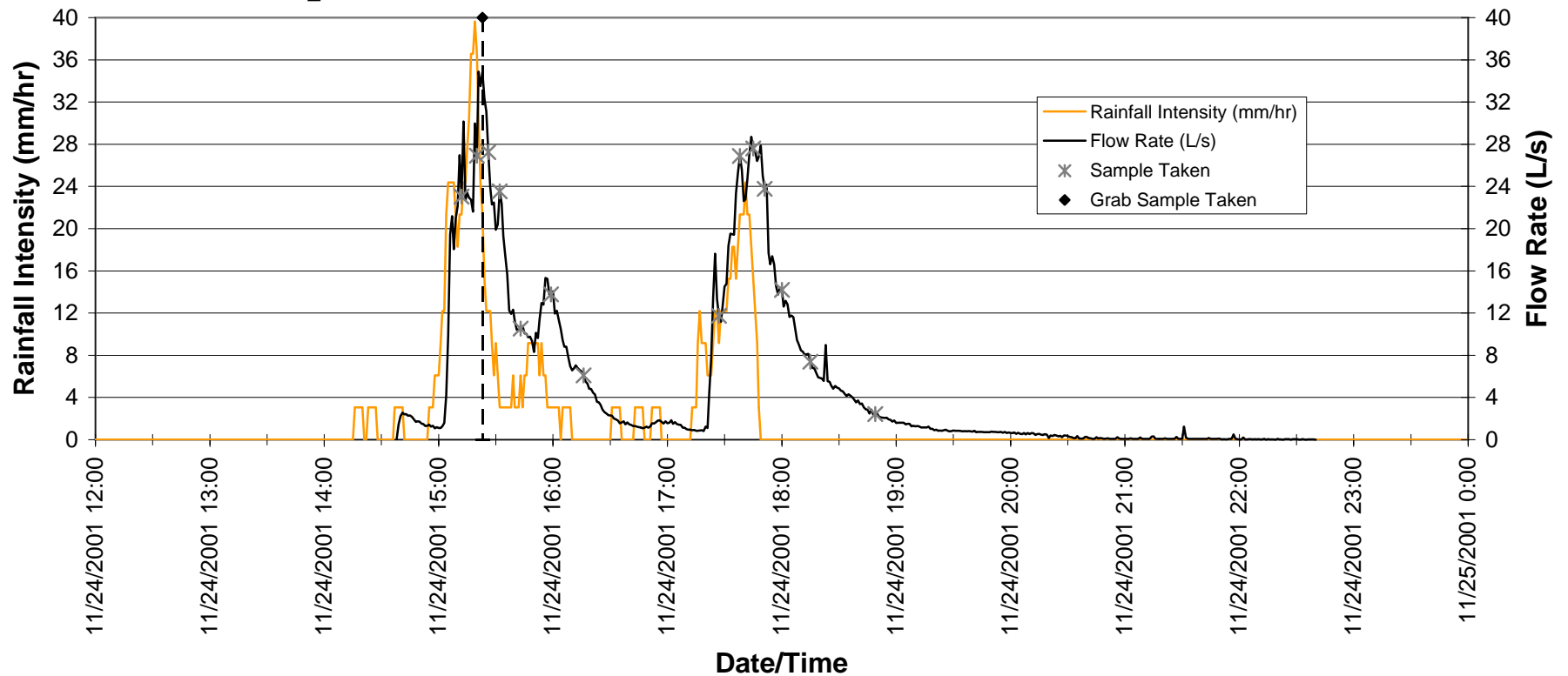
Start Date/Time: 11/12/01 18:47  
Stop Date/Time: 11/12/01 19:57  
Estimated Percent Capture: 96%  
Successful Aliquots: 6

Notes:

## Event Summary

Site: 506R (12-210)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/24/01 14:16  
Stop Date/Time: 11/24/01 17:44  
Event Rain (mm): 23.37  
Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 11/24/01 14:38  
Stop Date/Time: 11/24/01 22:40  
Total Flow Volume (L): 150886  
Peak Flow (L/s): 34.89  
Observed Runoff Coefficient: 0.232

### Sample Data

Start Date/Time: 11/24/01 14:38  
Stop Date/Time: 11/24/01 18:51  
Estimated Percent Capture: 96%  
Successful Aliquots: 14

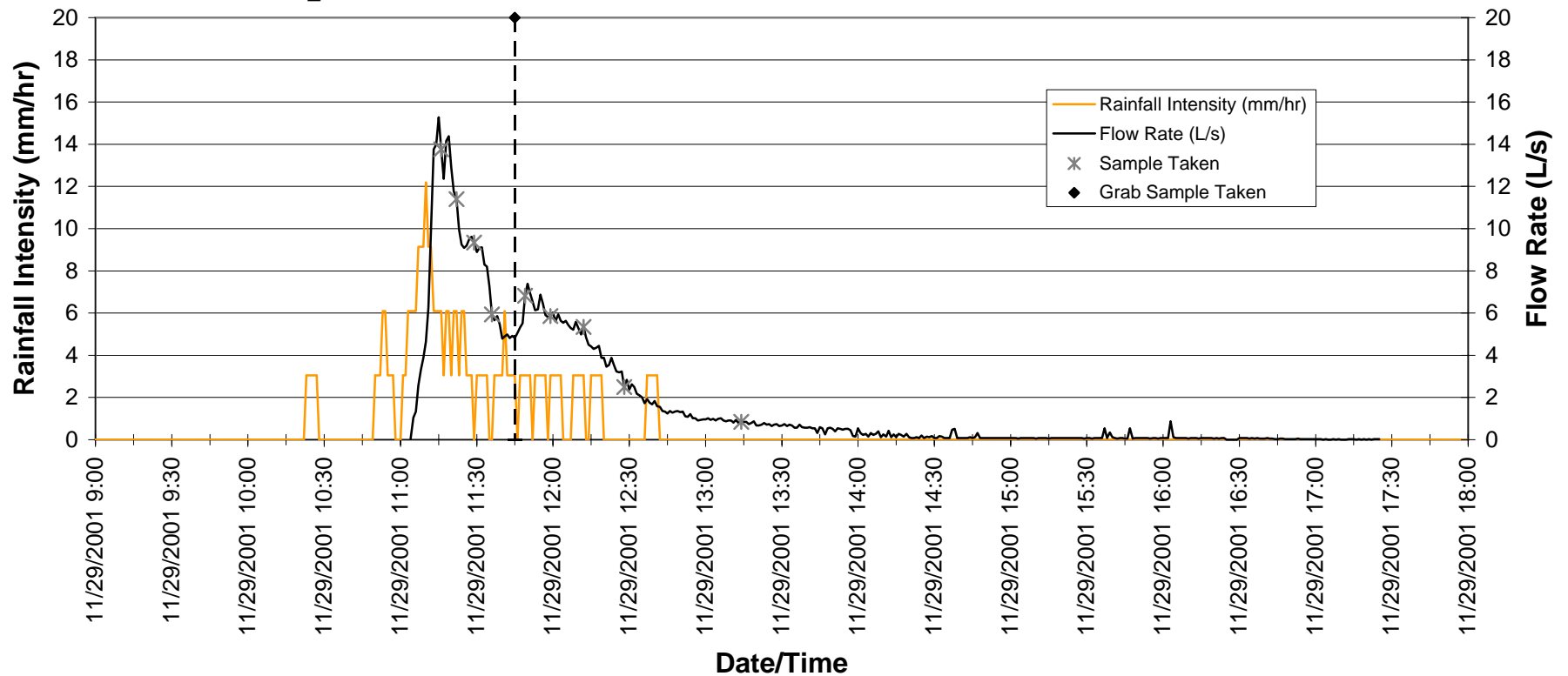
Notes:

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## Event Summary

Site: 506R (12-210)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/29/01 10:23  
Stop Date/Time: 11/29/01 12:37  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 11/29/01 11:04  
Stop Date/Time: 11/29/01 17:25  
Total Flow Volume (L): 39913  
Peak Flow (L/s): 15.28  
Observed Runoff Coefficient: 0.246

### Sample Data

Start Date/Time: 11/29/01 11:04  
Stop Date/Time: 11/29/01 13:16  
Estimated Percent Capture: 93%  
Successful Aliquots: 9

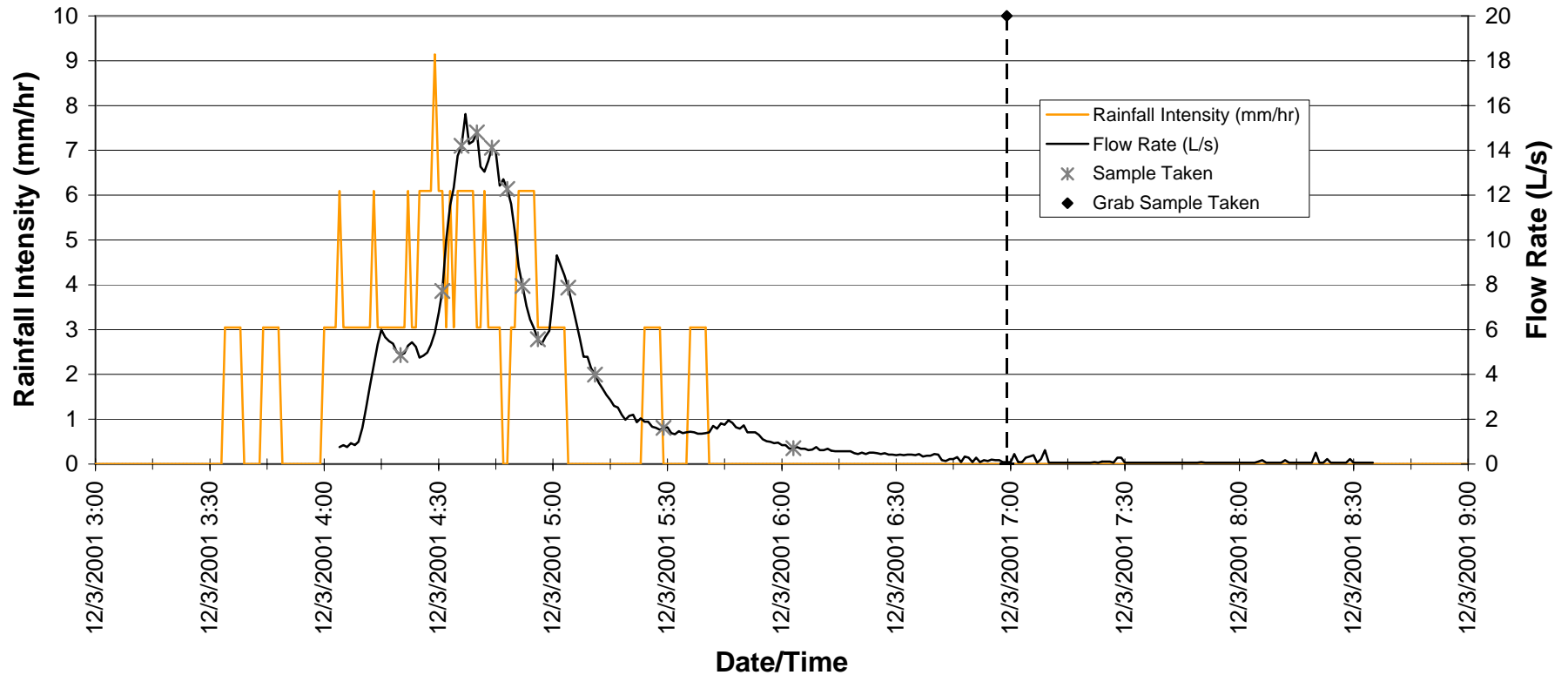
Notes:

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## Event Summary

Site: 506R (12-210)  
Event: 12/03/2001\_2001-04

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 12/03/01 03:34  
Stop Date/Time: 12/03/01 05:36  
Event Rain (mm): 5.33  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 12/03/01 04:04  
Stop Date/Time: 12/03/01 08:35  
Total Flow Volume (L): 37246  
Peak Flow (L/s): 15.62  
Observed Runoff Coefficient: 0.251

### Sample Data

Start Date/Time: 12/03/01 04:04  
Stop Date/Time: 12/03/01 06:05  
Estimated Percent Capture: 95%  
Successful Aliquots: 12

Notes:

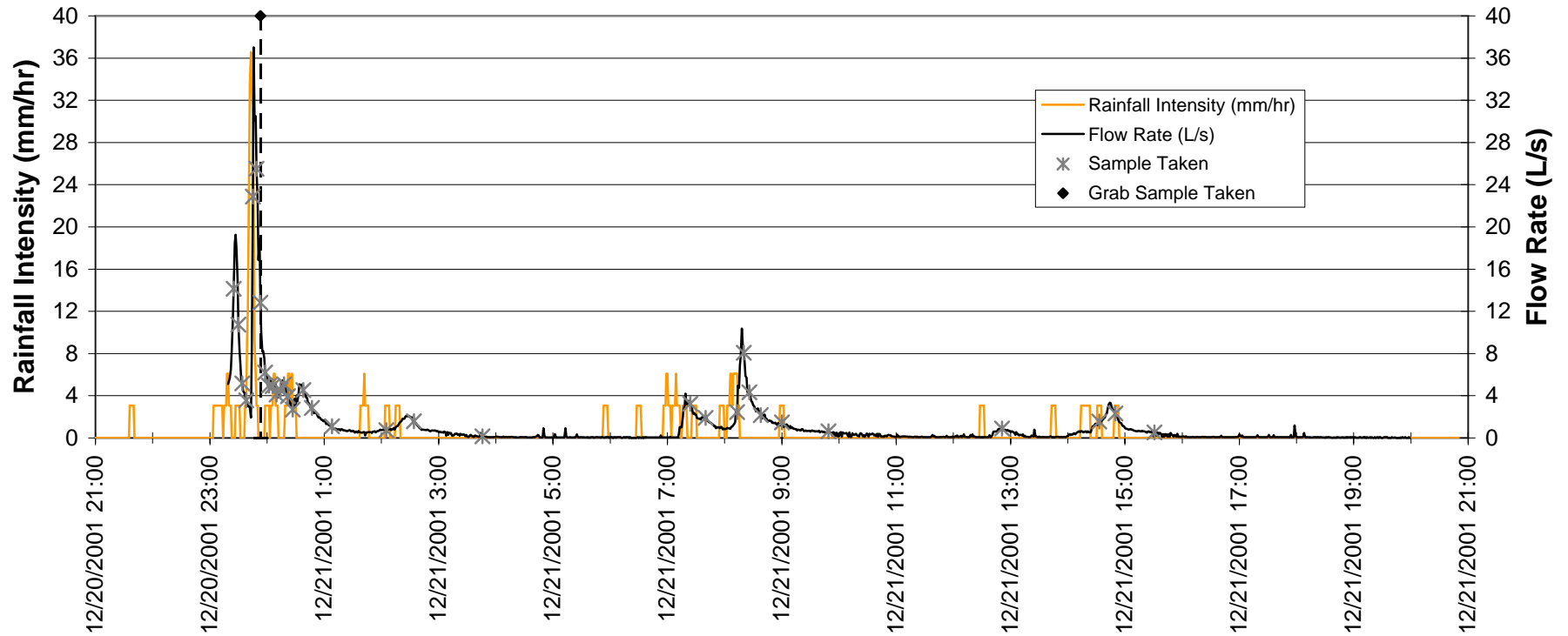
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## Event Summary

Site: 506R (12-210)

Catchment Area (ha): 2.78

Event: 12/20/2001 to 12/21/2001\_2001-05



### Rain Data

Start Date/Time: 12/20/01 21:36  
Stop Date/Time: 12/21/01 14:49  
Event Rain (mm): 12.95  
Max Intensity (mm/hr): 36.58

### Date/Time

### Runoff Data

Start Date/Time: 12/20/01 23:19  
Stop Date/Time: 12/21/01 19:59  
Total Flow Volume (L): 79034  
Peak Flow (L/s): 37.02  
Observed Runoff Coefficient: 0.219

### Sample Data

Start Date/Time: 12/20/01 23:19  
Stop Date/Time: 12/21/01 15:33  
Estimated Percent Capture: 98%  
Successful Aliquots: 33

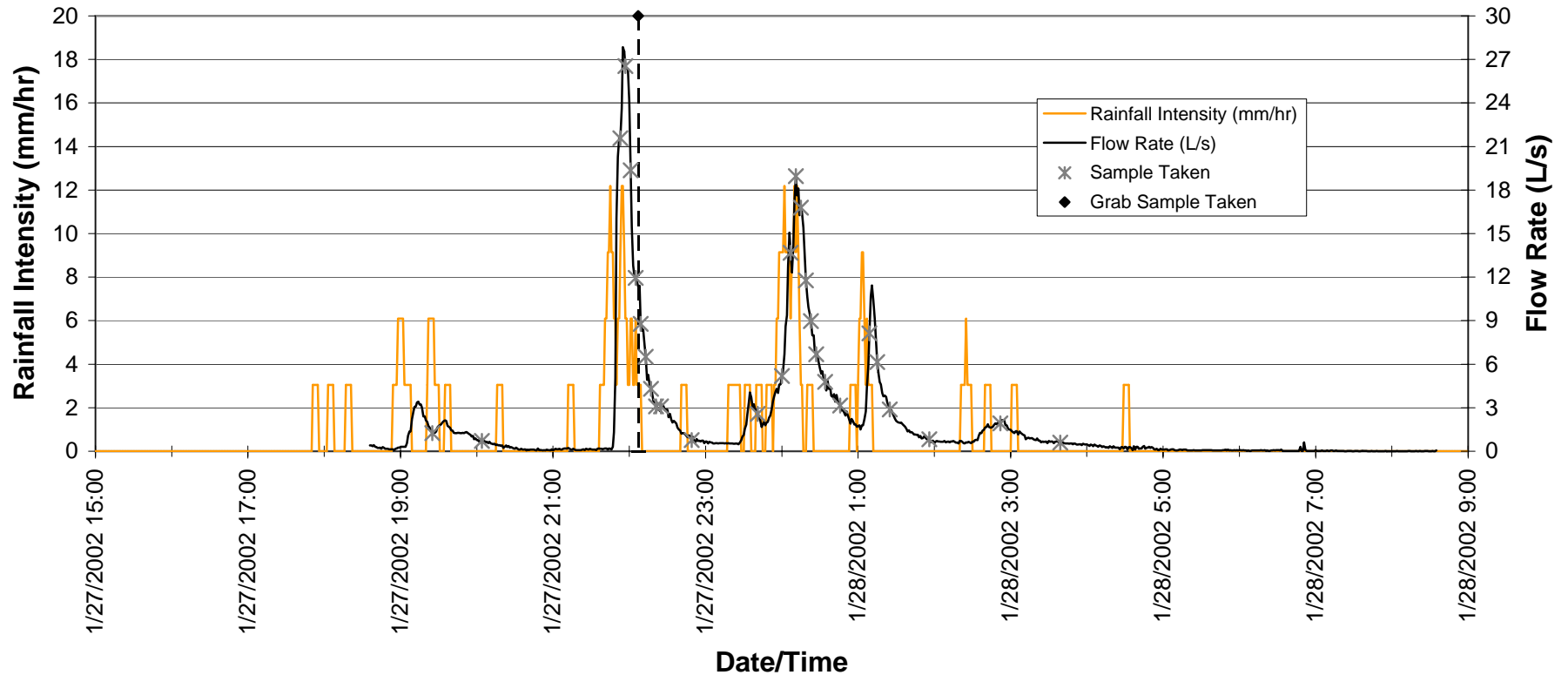
Notes:

## Event Summary

Site: 506R (12-210)

Catchment Area (ha): 2.78

Event: 1/27/2002 to 1/28/2002\_2001-06



### Rain Data

Start Date/Time: 01/27/02 17:51  
 Stop Date/Time: 01/28/02 04:29  
 Event Rain (mm): 13.97  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 01/27/02 18:36  
 Stop Date/Time: 01/28/02 08:35  
 Total Flow Volume (L): 90164  
 Peak Flow (L/s): 27.85  
 Observed Runoff Coefficient: 0.232

### Sample Data

Start Date/Time: 01/27/02 18:36  
 Stop Date/Time: 01/28/02 03:41  
 Estimated Percent Capture: 98%  
 Successful Aliquots: 28

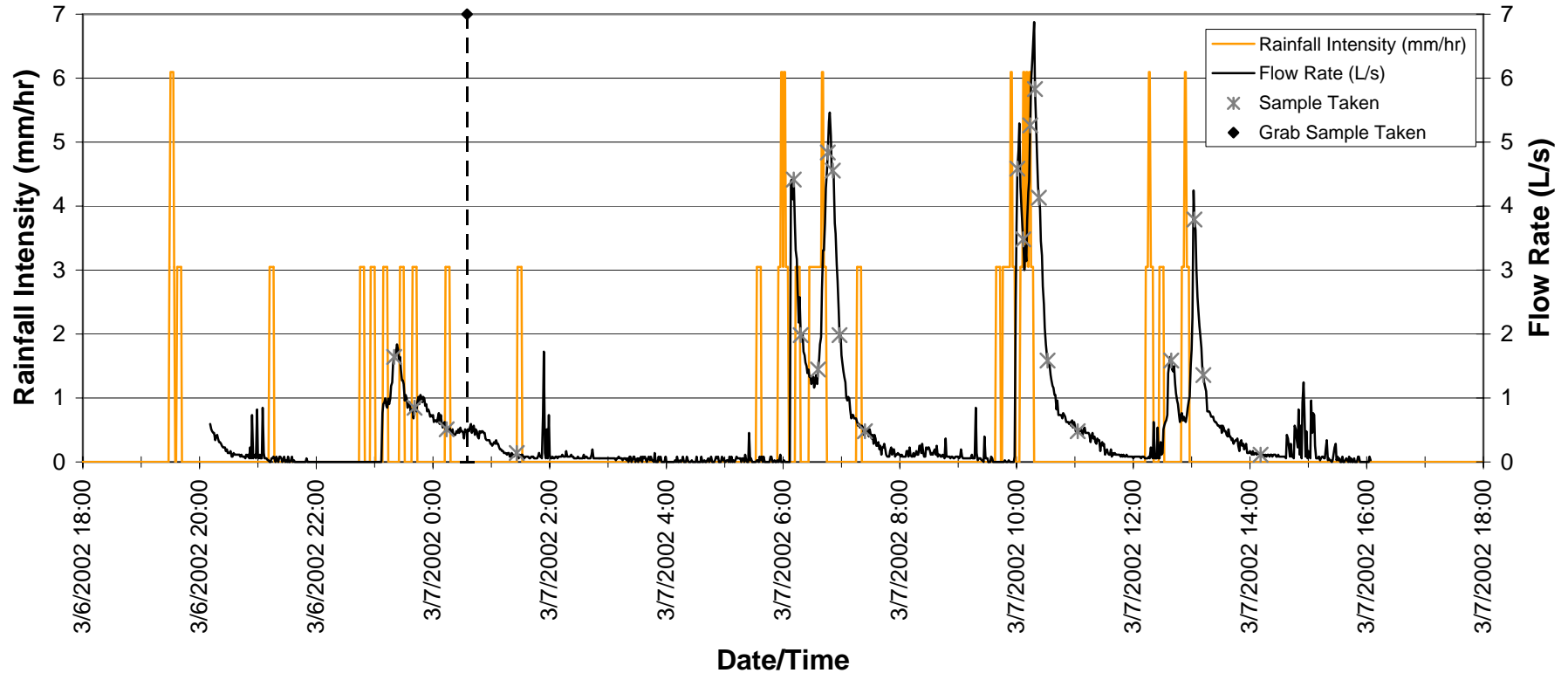
Notes:

## Event Summary

Site: 506R (12-210)

Catchment Area (ha): 2.78

Event: 03-06-2002 to 03-07-2002\_2001-07



### Rain Data

Start Date/Time: 03/06/02 19:29  
Stop Date/Time: 03/07/02 12:53  
Event Rain (mm): 8.64  
Max Intensity (mm/hr): 6.10

### Runoff Data

Start Date/Time: 03/06/02 20:11  
Stop Date/Time: 03/07/02 16:04  
Total Flow Volume (L): 35227  
Peak Flow (L/s): 6.88  
Observed Runoff Coefficient: 0.147

### Sample Data

Start Date/Time: 03/06/02 20:11  
Stop Date/Time: 03/07/02 14:13  
Estimated Percent Capture: 97%  
Successful Aliquots: 22

Notes:

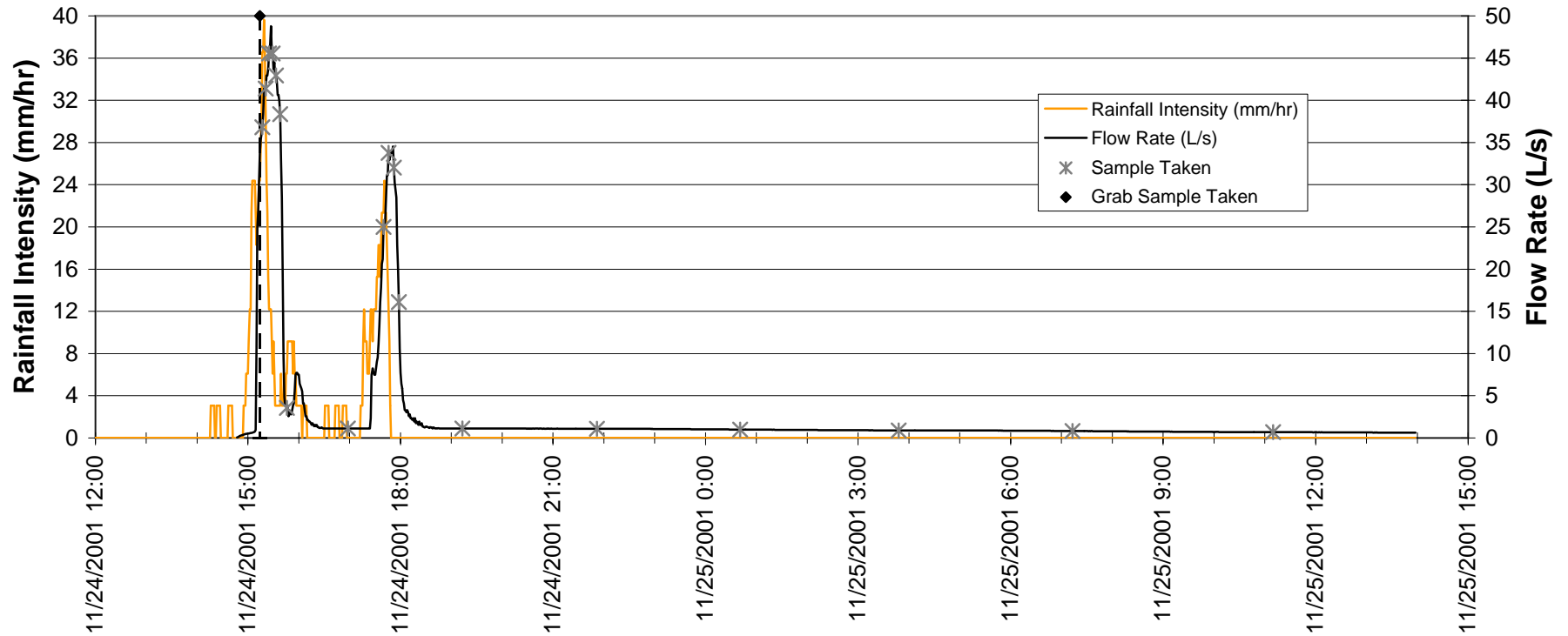
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## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 2.78

Event: 11/24/2001 to 11/25/2001\_2001-01



### Rain Data

Start Date/Time: 11/24/01 14:16  
Stop Date/Time: 11/24/01 17:44  
Event Rain (mm): 23.37  
Max Intensity (mm/hr): 39.62

### Date/Time

### Runoff Data

Start Date/Time: 11/24/01 14:47  
Stop Date/Time: 11/25/01 13:58  
Total Flow Volume (L): 198695  
Peak Flow (L/s): 48.79  
Observed Runoff Coefficient: 0.306

### Sample Data

Start Date/Time: 11/24/01 14:47  
Stop Date/Time: 11/25/01 11:12  
Estimated Percent Capture: 97%  
Successful Aliquots: 18

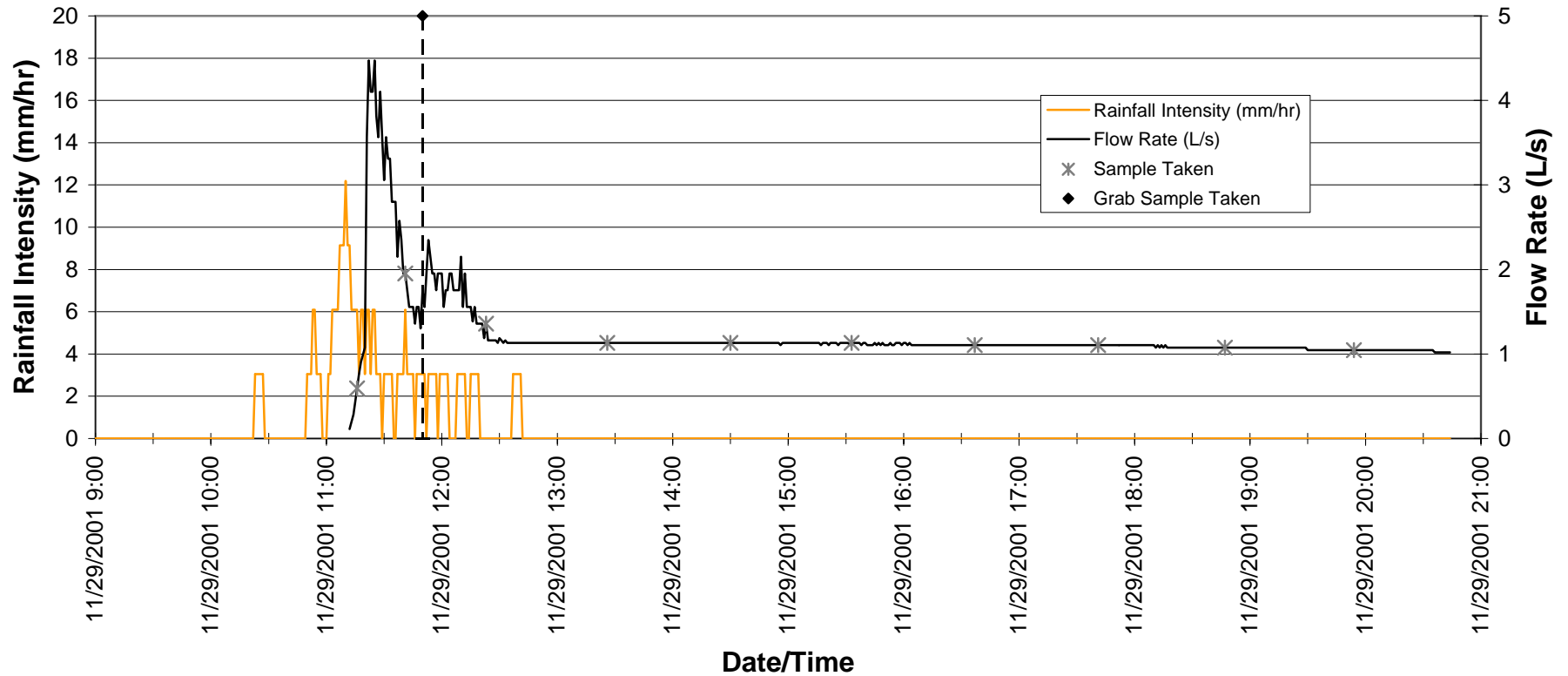
Notes:

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## Event Summary

Site: 506R (12-211)  
Event: 11/29/2001\_2001-02

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/29/01 10:23  
Stop Date/Time: 11/29/01 12:37  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 11/29/01 11:12  
Stop Date/Time: 11/29/01 20:44  
Total Flow Volume (L): 41769  
Peak Flow (L/s): 4.47  
Observed Runoff Coefficient: 0.257

### Sample Data

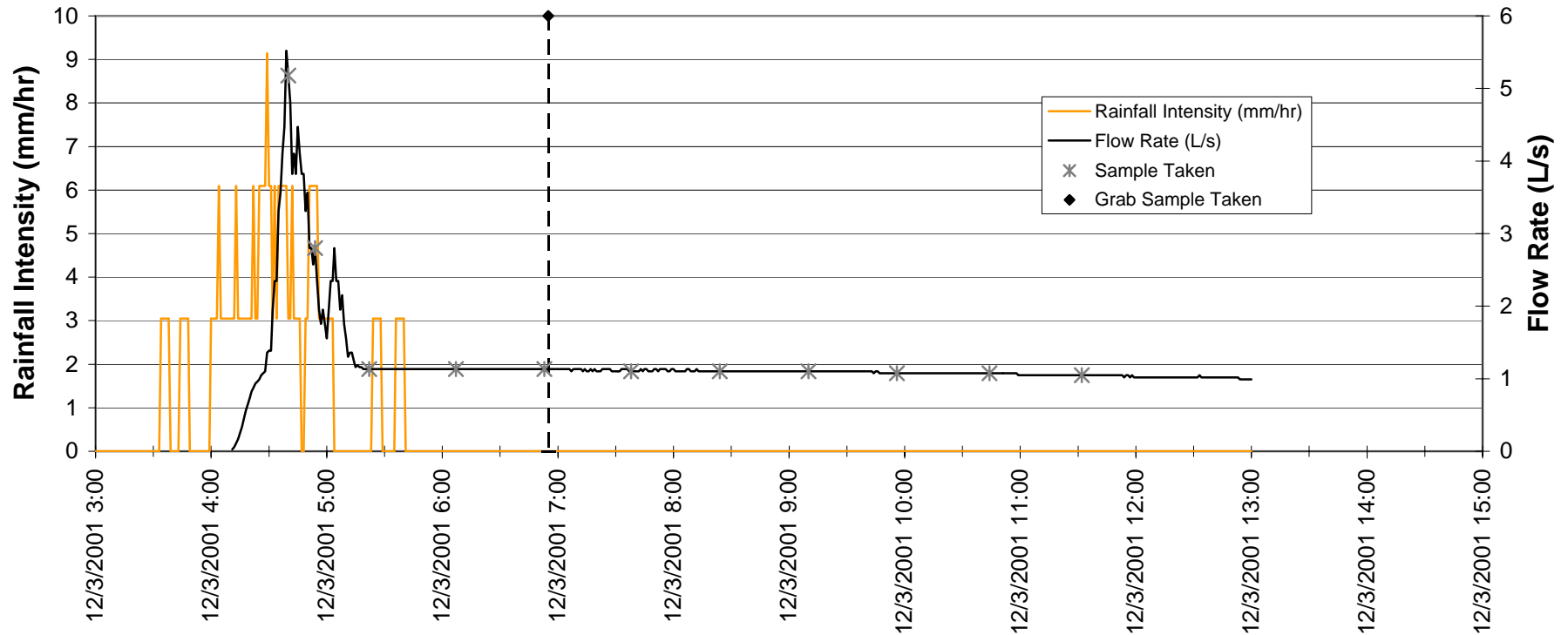
Start Date/Time: 11/29/01 11:12  
Stop Date/Time: 11/29/01 19:56  
Estimated Percent Capture: 93%  
Successful Aliquots: 10

Notes:

## Event Summary

Site: 506R (12-211)  
Event: 12/03/2001\_2001-03

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 12/03/01 03:34  
Stop Date/Time: 12/03/01 05:36  
Event Rain (mm): 5.33  
Max Intensity (mm/hr): 9.14

### Date/Time

### Runoff Data

Start Date/Time: 12/03/01 04:11  
Stop Date/Time: 12/03/01 13:00  
Total Flow Volume (L): 38636  
Peak Flow (L/s): 5.52  
Observed Runoff Coefficient: 0.261

### Sample Data

Start Date/Time: 12/03/01 04:11  
Stop Date/Time: 12/03/01 11:34  
Estimated Percent Capture: 80%  
Successful Aliquots: 11

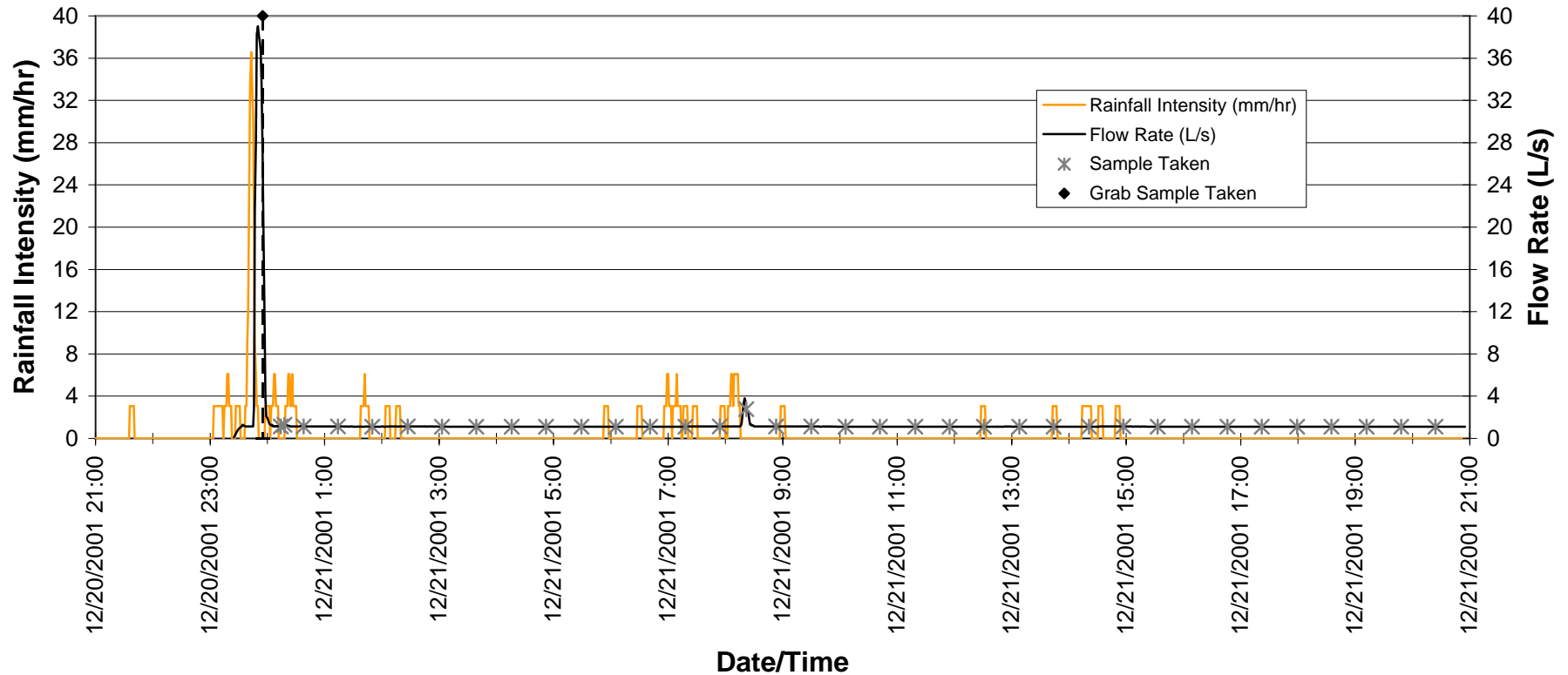
Notes: Approximately 2,100 Liters of water remained in the inlet bay at the time the sampler was shut down. This flow has been factored into the percent capture (32,454 L captured out of approximately 40,736 L)

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 2.78

Event: 12/20/2001 to 12/21/2001\_2001-04



### Rain Data

Start Date/Time: 12/20/01 21:36  
 Stop Date/Time: 12/21/01 14:49  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 12/20/01 23:25  
 Stop Date/Time: 12/21/01 20:55  
 Total Flow Volume (L): 106362  
 Peak Flow (L/s): 39.03  
 Observed Runoff Coefficient: 0.295

### Sample Data

Start Date/Time: 12/20/01 23:25  
 Stop Date/Time: 12/21/01 20:26  
 Estimated Percent Capture: 80%  
 Successful Aliquots: 36

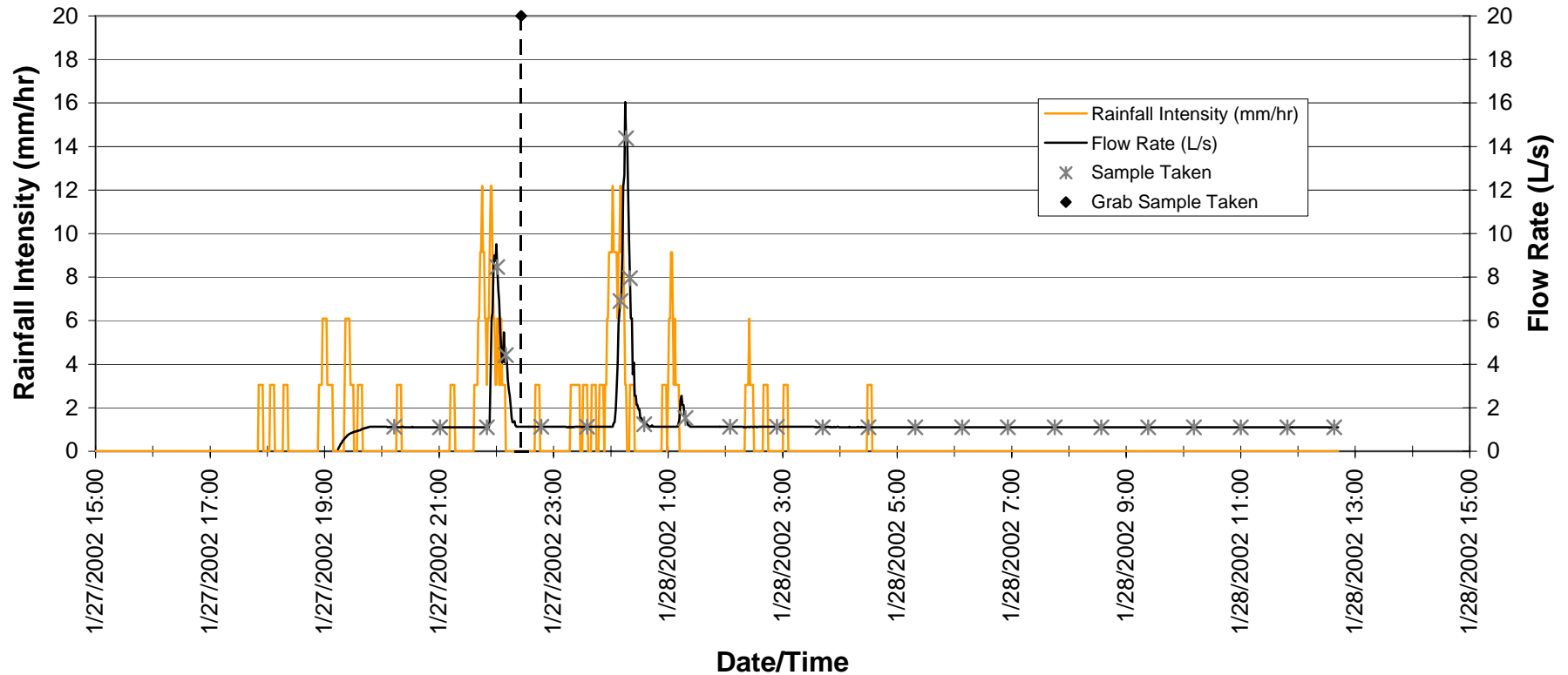
Notes: Samples not collected during peak flow due to misaligned distributor arm. Approximately 2830 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (87,430 L captured out of approximately 109,192 L of total flow).

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 2.78

Event: 01/27/2002 to 01/28/2002\_2001-05



### Rain Data

Start Date/Time: 01/27/02 17:51  
 Stop Date/Time: 01/28/02 04:29  
 Event Rain (mm): 13.97  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 01/27/02 19:14  
 Stop Date/Time: 01/28/02 12:42  
 Total Flow Volume (L): 84720  
 Peak Flow (L/s): 16.05  
 Observed Runoff Coefficient: 0.218

### Sample Data

Start Date/Time: 01/27/02 19:14  
 Stop Date/Time: 01/28/02 12:40  
 Estimated Percent Capture: 92%  
 Successful Aliquots: 26

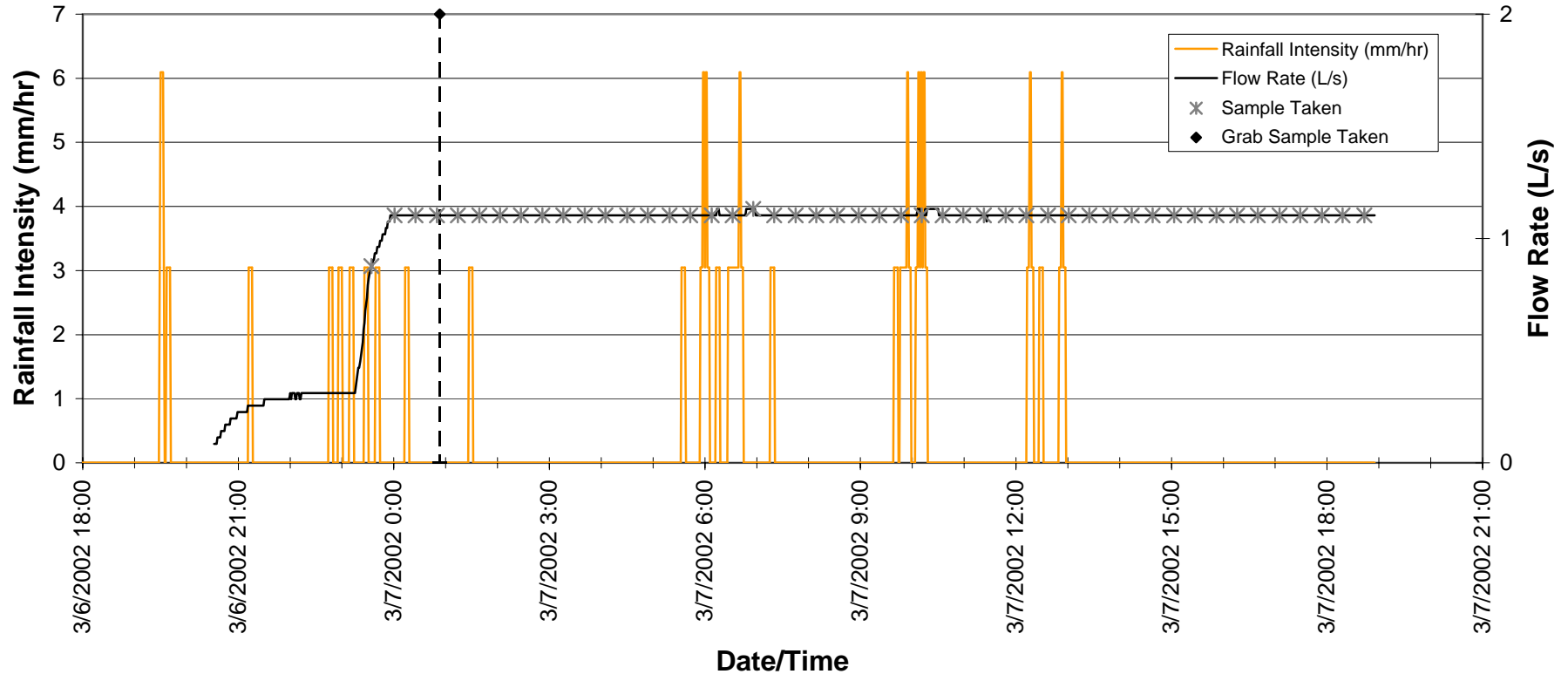
Notes: Approximately 3,540 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (81,321 L captured out of approximately 88,260 L of total flow).

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 2.78

Event: 03/06/2002 to 03/07/2002\_2001-06



### Rain Data

Start Date/Time: 03/06/02 19:29  
 Stop Date/Time: 03/07/02 12:53  
 Event Rain (mm): 8.64  
 Max Intensity (mm/hr): 6.10

### Runoff Data

Start Date/Time: 03/06/02 20:32  
 Stop Date/Time: 03/07/02 18:55  
 Total Flow Volume (L): 80064  
 Peak Flow (L/s): 1.13  
 Observed Runoff Coefficient: 0.333

### Sample Data

Start Date/Time: 03/06/02 20:32  
 Stop Date/Time: 03/07/02 18:45  
 Estimated Percent Capture: 91%  
 Successful Aliquots: 48

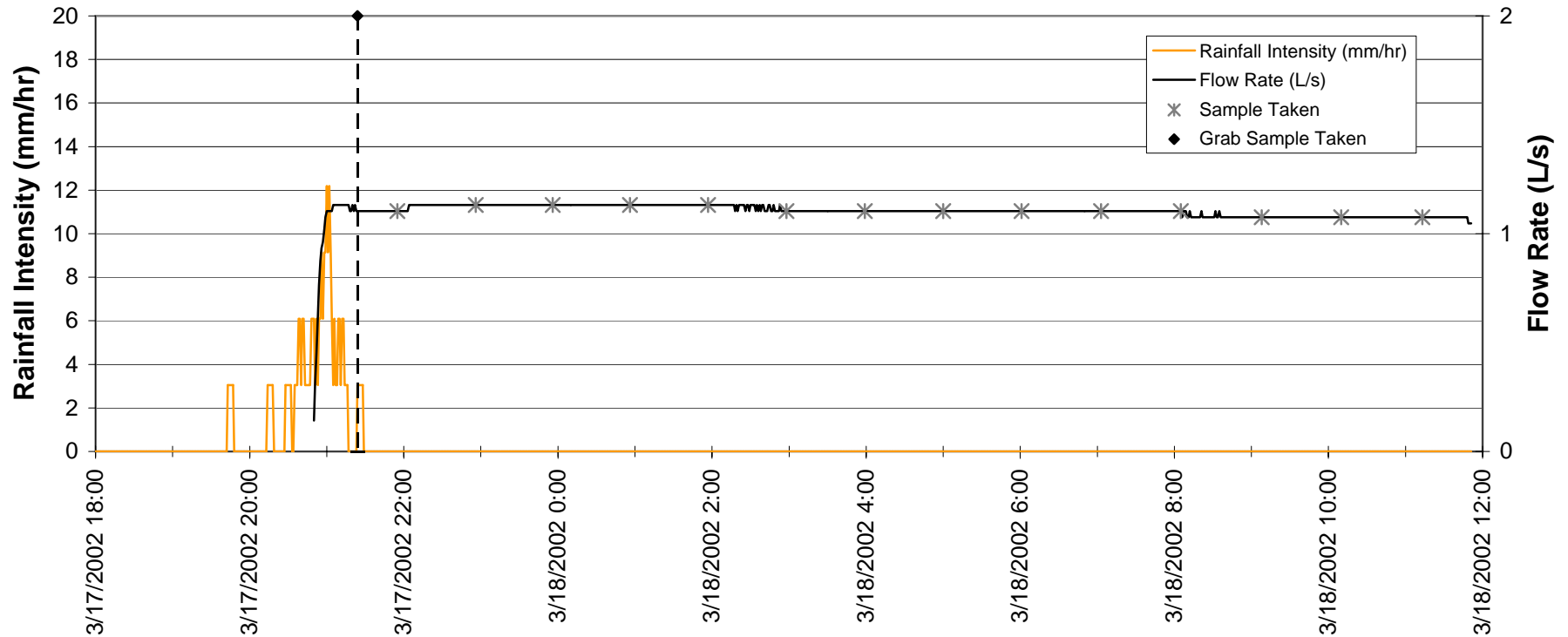
Notes: Approximately 3,400 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (76,221 L captured out of approximately 83,464 L of total flow).

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 2.78

Event: 3/17/2002 to 3/18/2002\_2001-07



### Rain Data

Start Date/Time: 03/17/02 19:43  
 Stop Date/Time: 03/17/02 21:24  
 Event Rain (mm): 4.83  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 03/17/02 20:50  
 Stop Date/Time: 03/18/02 11:51  
 Total Flow Volume (L): 59578  
 Peak Flow (L/s): 1.13  
 Observed Runoff Coefficient: 0.444

### Sample Data

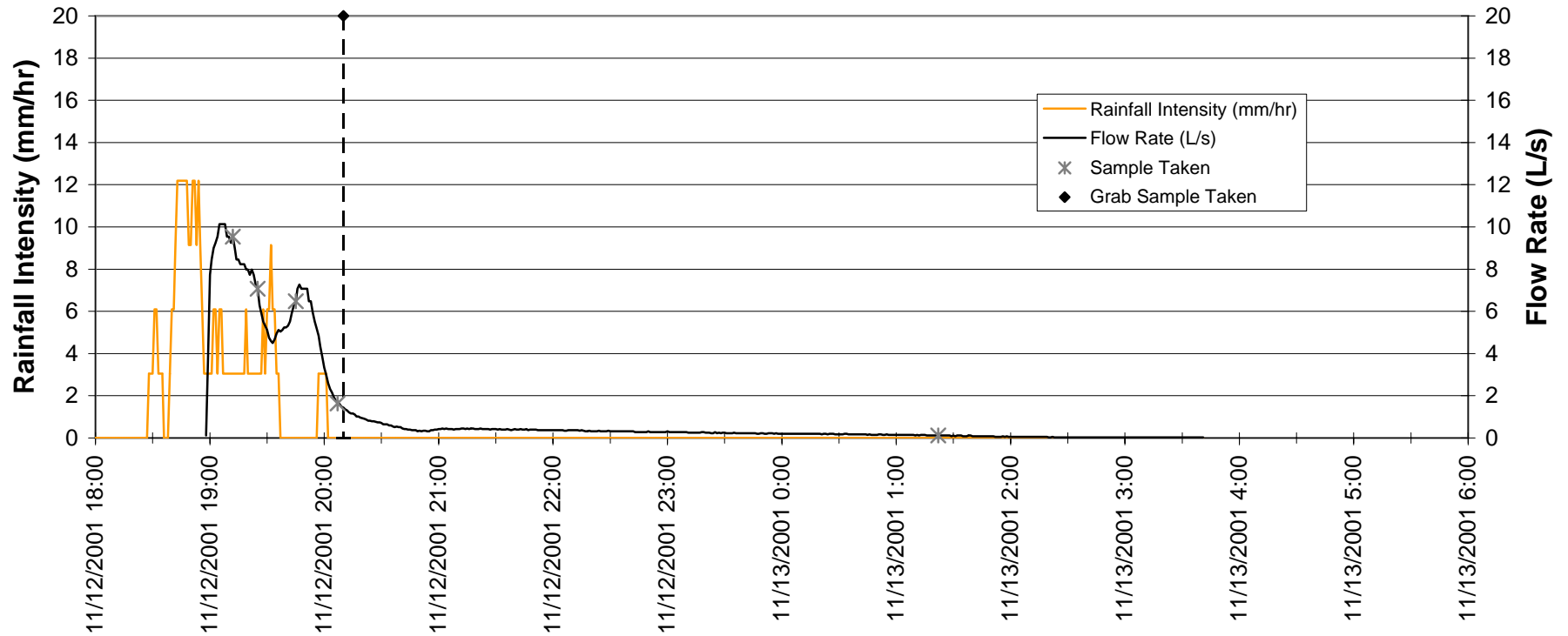
Start Date/Time: 03/17/02 20:50  
 Stop Date/Time: 03/18/02 11:15  
 Estimated Percent Capture: 90%  
 Successful Aliquots: 14

Notes: Approximately 4,250 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (57,254 L captured out of approximately 63,828 L of total flow).

## Event Summary

Site: 506R (12-212)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/12/01 18:28  
Stop Date/Time: 11/12/01 19:57  
Event Rain (mm): 6.35  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 11/12/01 18:58  
Stop Date/Time: 11/13/01 03:41  
Total Flow Volume (L): 33416  
Peak Flow (L/s): 10.13  
Observed Runoff Coefficient: 0.189

### Sample Data

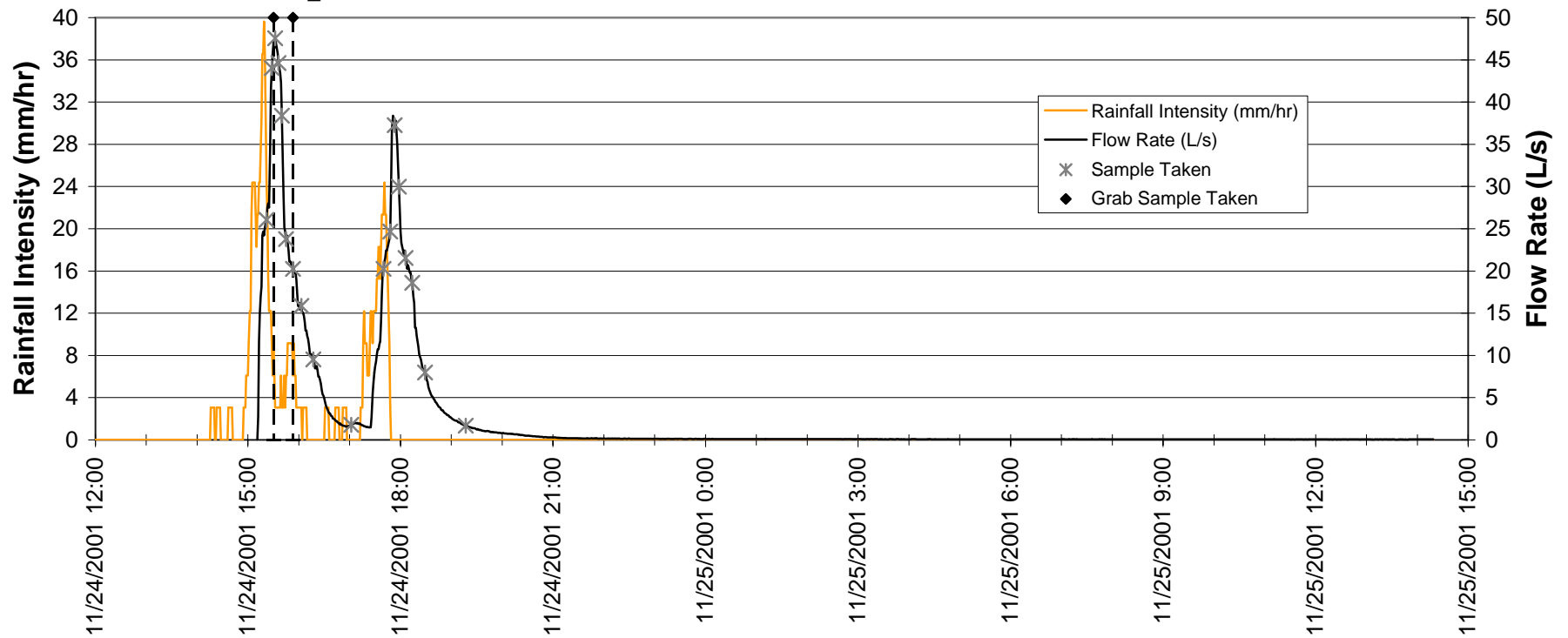
Start Date/Time: 11/12/01 18:58  
Stop Date/Time: 11/13/01 01:24  
Estimated Percent Capture: 99%  
Successful Aliquots: 5

Notes:

## Event Summary

Site: 506R (12-212)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/24/01 14:16  
Stop Date/Time: 11/24/01 17:44  
Event Rain (mm): 23.37  
Max Intensity (mm/hr): 39.62

### Date/Time

### Runoff Data

Start Date/Time: 11/24/01 15:11  
Stop Date/Time: 11/25/01 14:19  
Total Flow Volume (L): 202070  
Peak Flow (L/s): 47.57  
Observed Runoff Coefficient: 0.311

### Sample Data

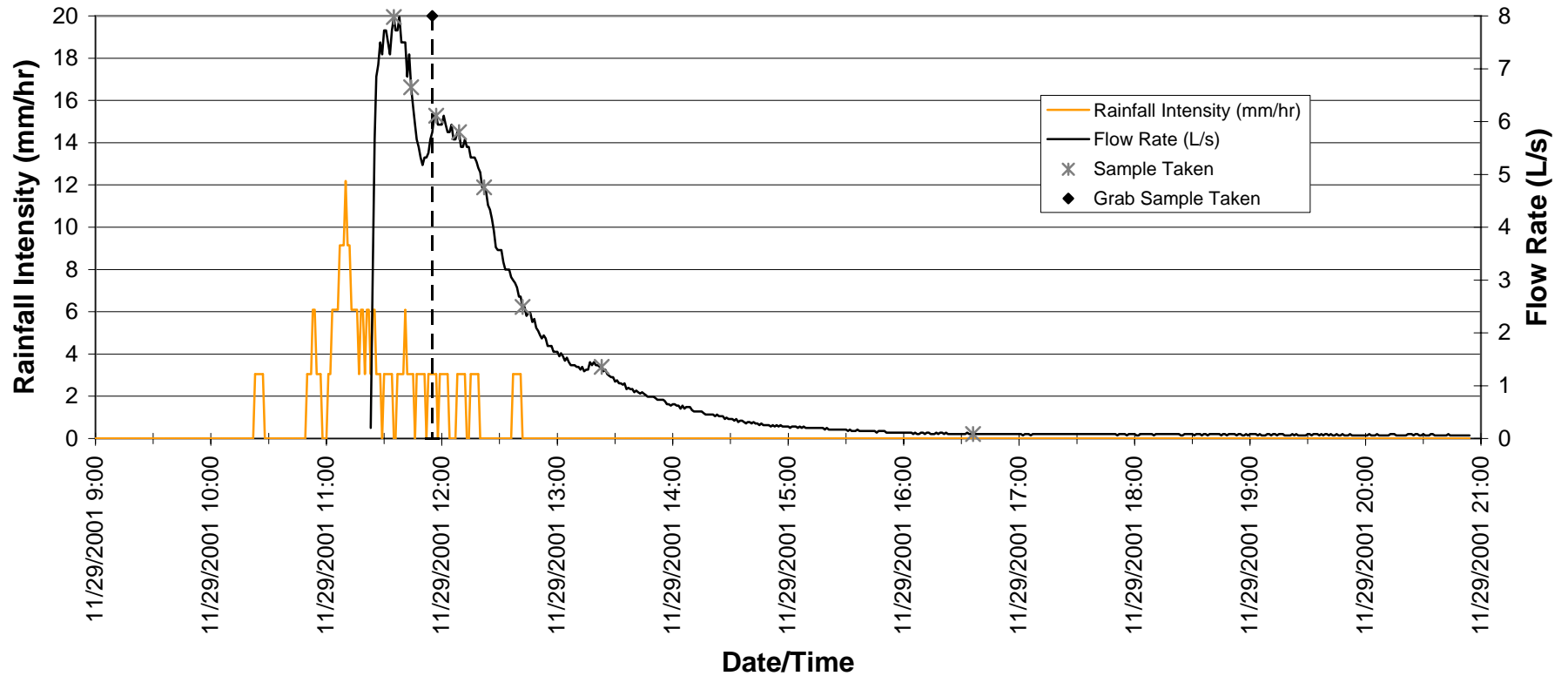
Start Date/Time: 11/24/01 15:11  
Stop Date/Time: 11/24/01 19:19  
Estimated Percent Capture: 95%  
Successful Aliquots: 18

Notes: Grab sample collected at 15:30 on November 24 was collected while system was bypassing flow over CSF Unit

## Event Summary

Site: 506R (12-212)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 11/29/01 10:23  
Stop Date/Time: 11/29/01 12:37  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 11/29/01 11:23  
Stop Date/Time: 11/29/01 20:54  
Total Flow Volume (L): 35338  
Peak Flow (L/s): 7.98  
Observed Runoff Coefficient: 0.218

### Sample Data

Start Date/Time: 11/29/01 11:23  
Stop Date/Time: 11/29/01 16:38  
Estimated Percent Capture: 97%  
Successful Aliquots: 8

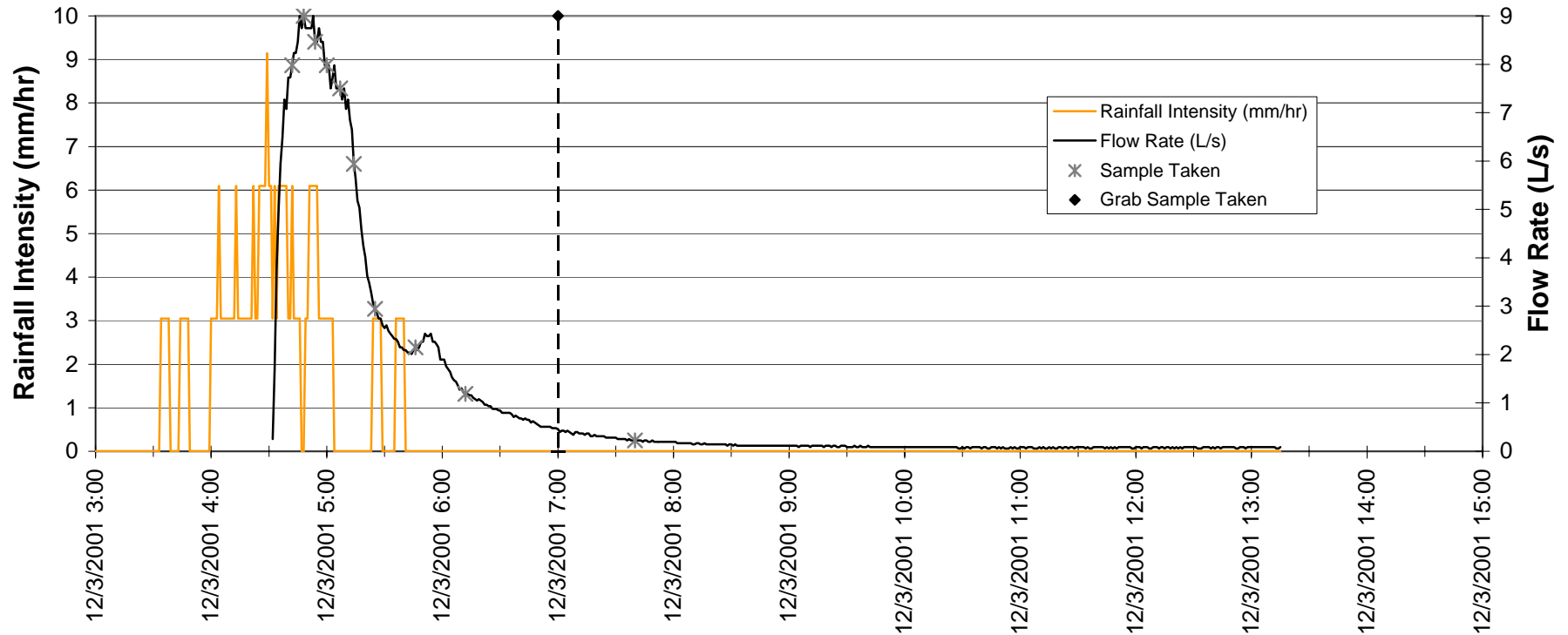
Notes:

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## Event Summary

Site: 506R (12-212)  
Event: 12/03/2001\_2001-04

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 12/03/01 03:34  
Stop Date/Time: 12/03/01 05:36  
Event Rain (mm): 5.33  
Max Intensity (mm/hr): 9.14

### Date/Time

### Runoff Data

Start Date/Time: 12/03/01 04:32  
Stop Date/Time: 12/03/01 13:15  
Total Flow Volume (L): 32563  
Peak Flow (L/s): 9.00  
Observed Runoff Coefficient: 0.220

### Sample Data

Start Date/Time: 12/03/01 04:32  
Stop Date/Time: 12/03/01 07:42  
Estimated Percent Capture: 88%  
Successful Aliquots: 10

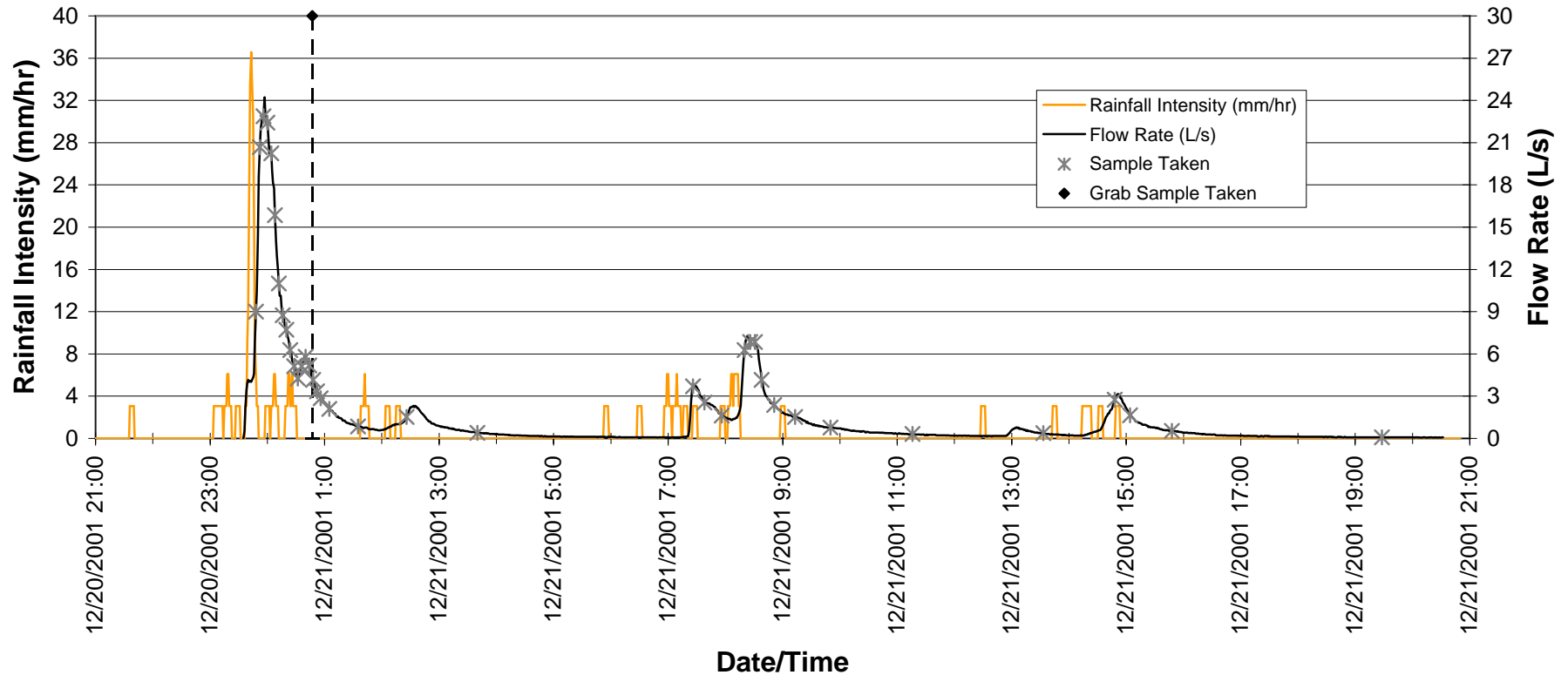
Notes: Approximately 2,100 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (30,609 L captured out of approximately 34,663 L of total flow).

## Event Summary

Site: 506R (12-212)

Catchment Area (ha): 2.78

Event: 12/20/2002 to 12/21/2001\_2001-05



### Rain Data

Start Date/Time: 12/20/01 21:36  
 Stop Date/Time: 12/21/01 14:49  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 36.58

### Date/Time

### Runoff Data

Start Date/Time: 12/20/01 23:35  
 Stop Date/Time: 12/21/01 20:32  
 Total Flow Volume (L): 95300  
 Peak Flow (L/s): 24.22  
 Observed Runoff Coefficient: 0.265

### Sample Data

Start Date/Time: 12/20/01 23:35  
 Stop Date/Time: 12/21/01 19:30  
 Estimated Percent Capture: 97%  
 Successful Aliquots: 38

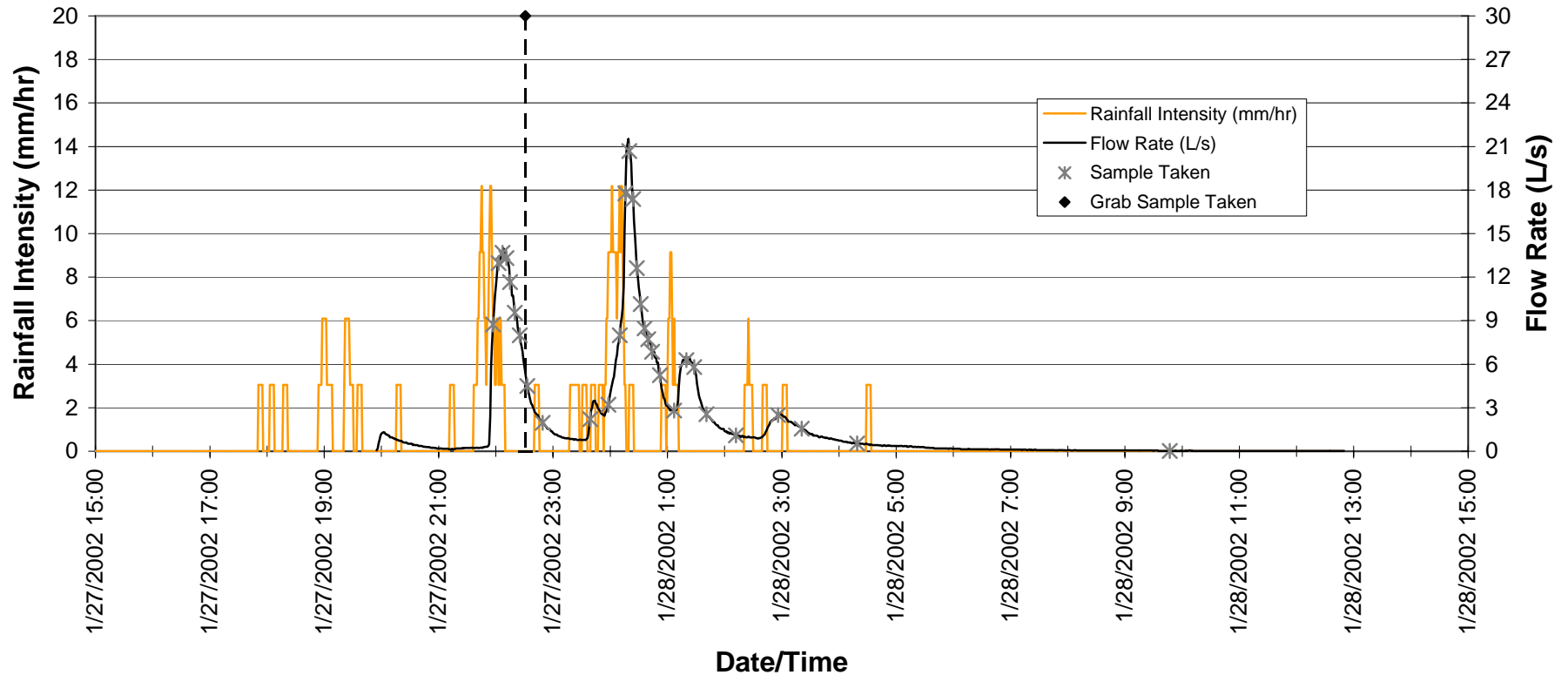
Notes: Approximately 2,830 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (95,300 L captured out of approximately 98,130 L of total flow).

## Event Summary

Site: 506R (12-212)

Catchment Area (ha): 2.78

Event: 1/27/2002 to 1/28/2002\_2001-06



### Rain Data

Start Date/Time: 01/27/02 17:51  
 Stop Date/Time: 01/28/02 04:29  
 Event Rain (mm): 13.97  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 01/27/02 19:55  
 Stop Date/Time: 01/28/02 12:50  
 Total Flow Volume (L): 97957  
 Peak Flow (L/s): 21.54  
 Observed Runoff Coefficient: 0.252

### Sample Data

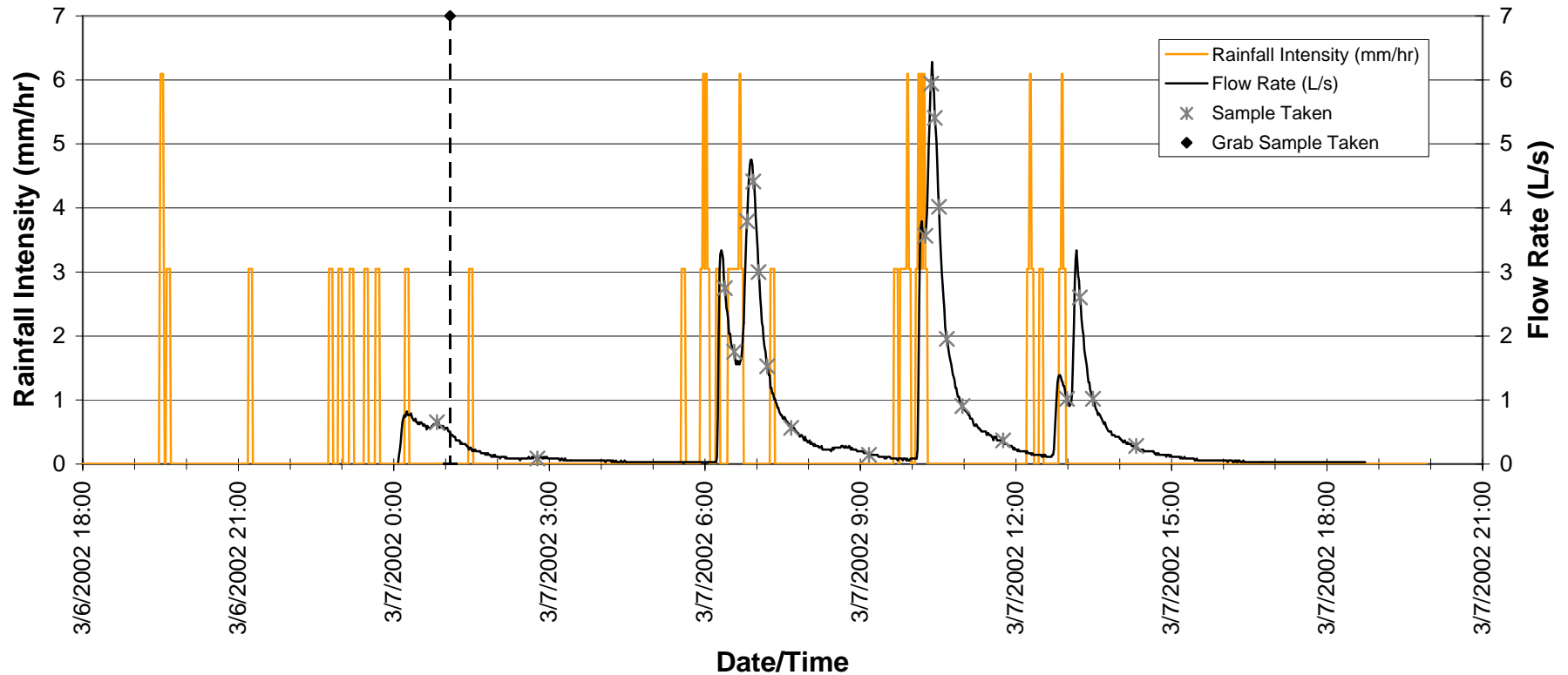
Start Date/Time: 01/27/02 19:55  
 Stop Date/Time: 01/28/02 09:49  
 Estimated Percent Capture: 96%  
 Successful Aliquots: 30

Notes: Approximately 3,540 L of water remained in the inlet bay when sampling system shut down. This flow has been factored into the percent capture (97,957 L captured out of approximately 101,497 L of total flow).

## Event Summary

Site: 506R (12-212)  
Event: 3/7/2002\_0001-07

Catchment Area (ha): 2.78



### Rain Data

Start Date/Time: 03/06/02 19:29  
Stop Date/Time: 03/07/02 12:53  
Event Rain (mm): 8.64  
Max Intensity (mm/hr): 6.10

### Runoff Data

Start Date/Time: 03/07/02 00:05  
Stop Date/Time: 03/07/02 18:44  
Total Flow Volume (L): 34940  
Peak Flow (L/s): 6.28  
Observed Runoff Coefficient: 0.146

### Sample Data

Start Date/Time: 03/07/02 00:05  
Stop Date/Time: 03/07/02 14:20  
Estimated Percent Capture: 88%  
Successful Aliquots: 21

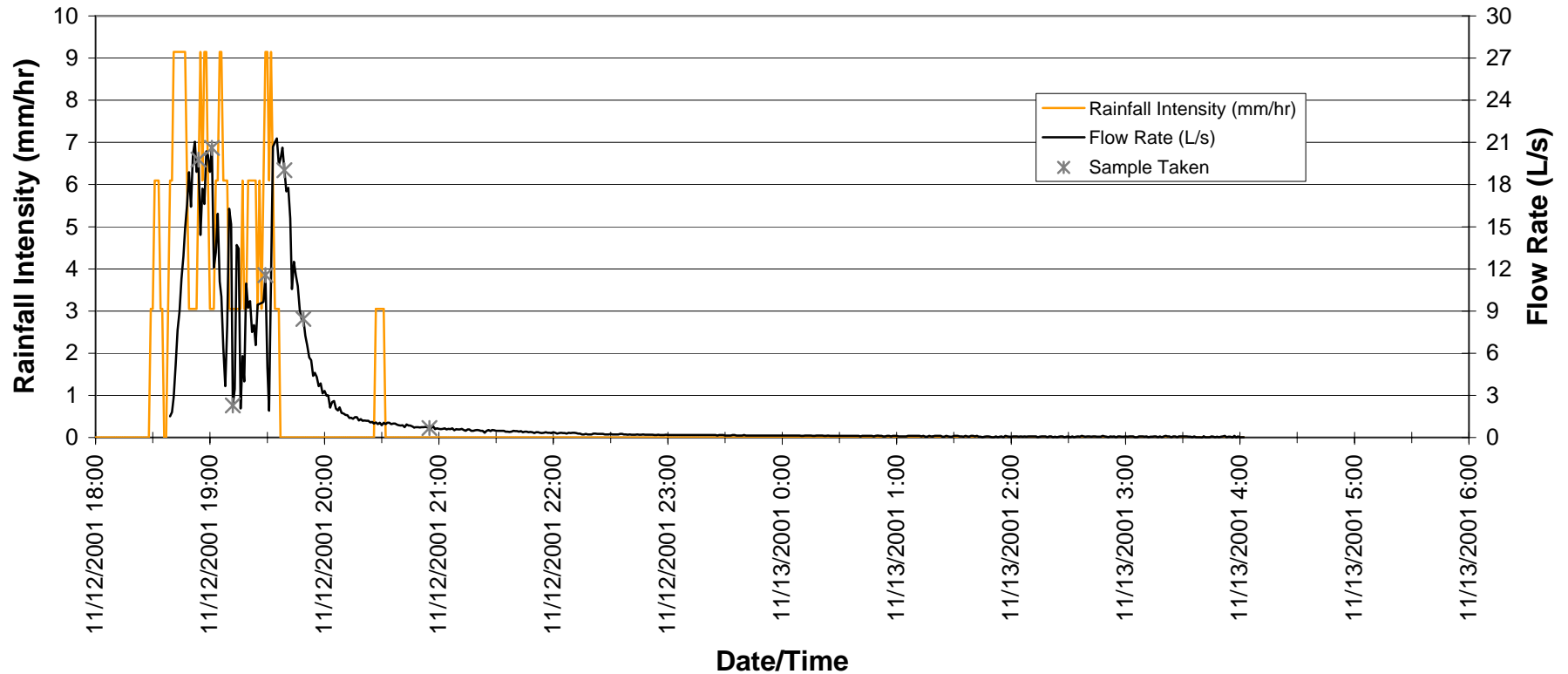
Notes: Approximately 3,400 L of water remained in the inlet bay when sampling system was shut down. This flow has been factored into the percent capture (33,892 L captured out of approximately 38,340 L of total flow).

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 4.43

Event: 11/12/2001 to 11/13/02\_2001-01



### Rain Data

Start Date/Time: 11/12/01 18:29  
Stop Date/Time: 11/12/01 20:27  
Event Rain (mm): 6.35  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/12/01 18:39  
Stop Date/Time: 11/13/01 04:02  
Total Flow Volume (L): 63790  
Peak Flow (L/s): 21.28  
Observed Runoff Coefficient: 0.227

### Sample Data

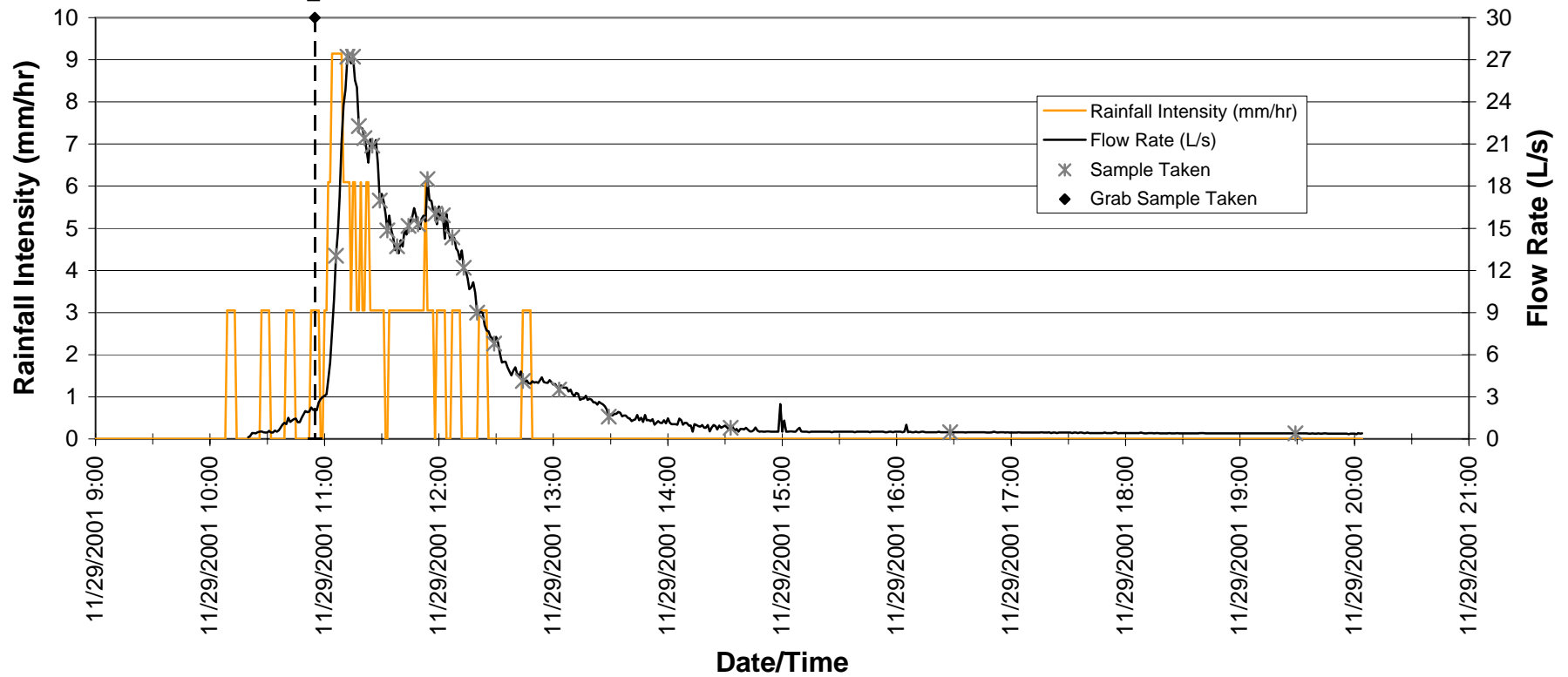
Start Date/Time: 11/12/01 18:39  
Stop Date/Time: 11/12/01 20:56  
Estimated Percent Capture: 93%  
Successful Aliquots: 7

Notes: No grab sample collected. No flow through all monitoring sites at the same time.

## Event Summary

Site: 604R (12-214)  
Event: 11/29/2001\_2001-02

Catchment Area (ha): 4.43



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:20  
Stop Date/Time: 11/29/01 20:04  
Total Flow Volume (L): 112678  
Peak Flow (L/s): 27.22  
Observed Runoff Coefficient: 0.417

### Sample Data

Start Date/Time: 11/29/01 10:20  
Stop Date/Time: 11/29/01 19:31  
Estimated Percent Capture: 99%  
Successful Aliquots: 24

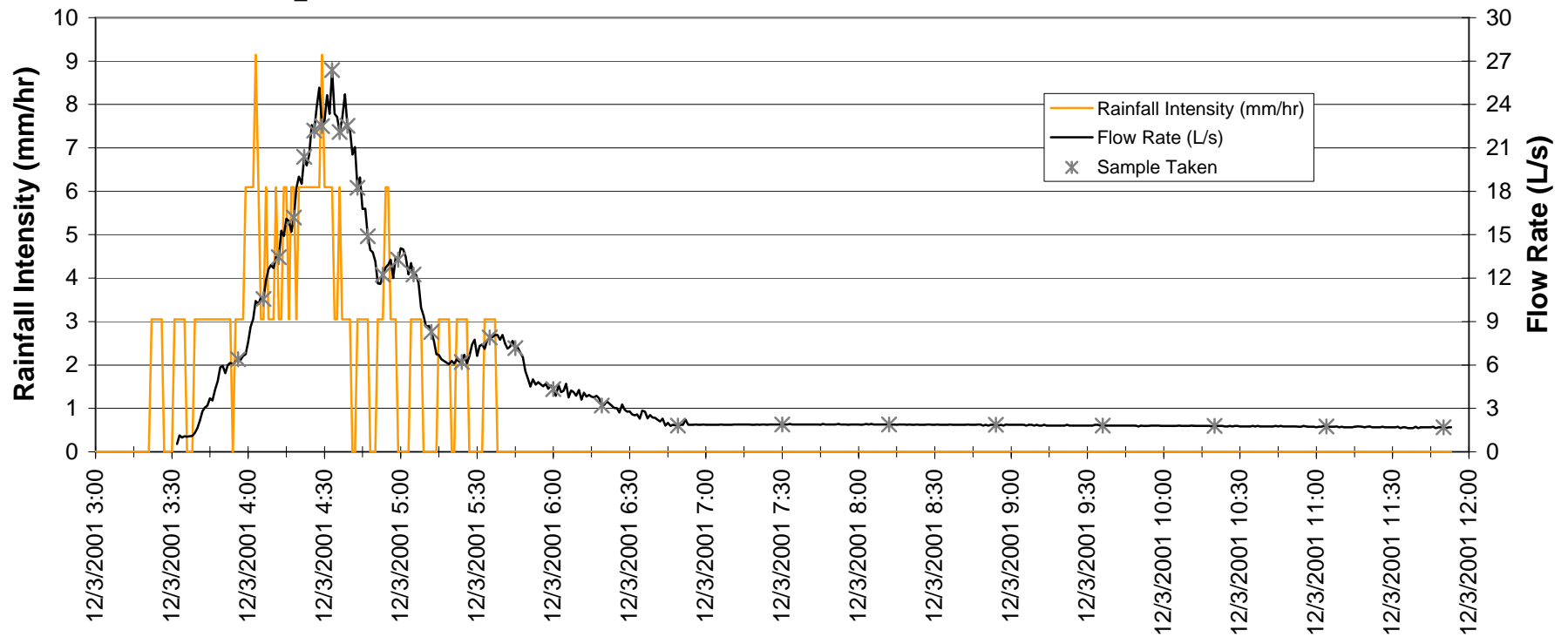
Notes:

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## Event Summary

Site: 604R (12-214)  
Event: 12/3/2001\_2001-03

Catchment Area (ha): 4.43



### Date/Time

#### Rain Data

Start Date/Time: 12/03/01 03:22  
Stop Date/Time: 12/03/01 05:33  
Event Rain (mm): 6.86  
Max Intensity (mm/hr): 9.14

#### Runoff Data

Start Date/Time: 12/03/01 03:32  
Stop Date/Time: 12/03/01 11:53  
Total Flow Volume (L): 136620  
Peak Flow (L/s): 26.38  
Observed Runoff Coefficient: 0.450

#### Sample Data

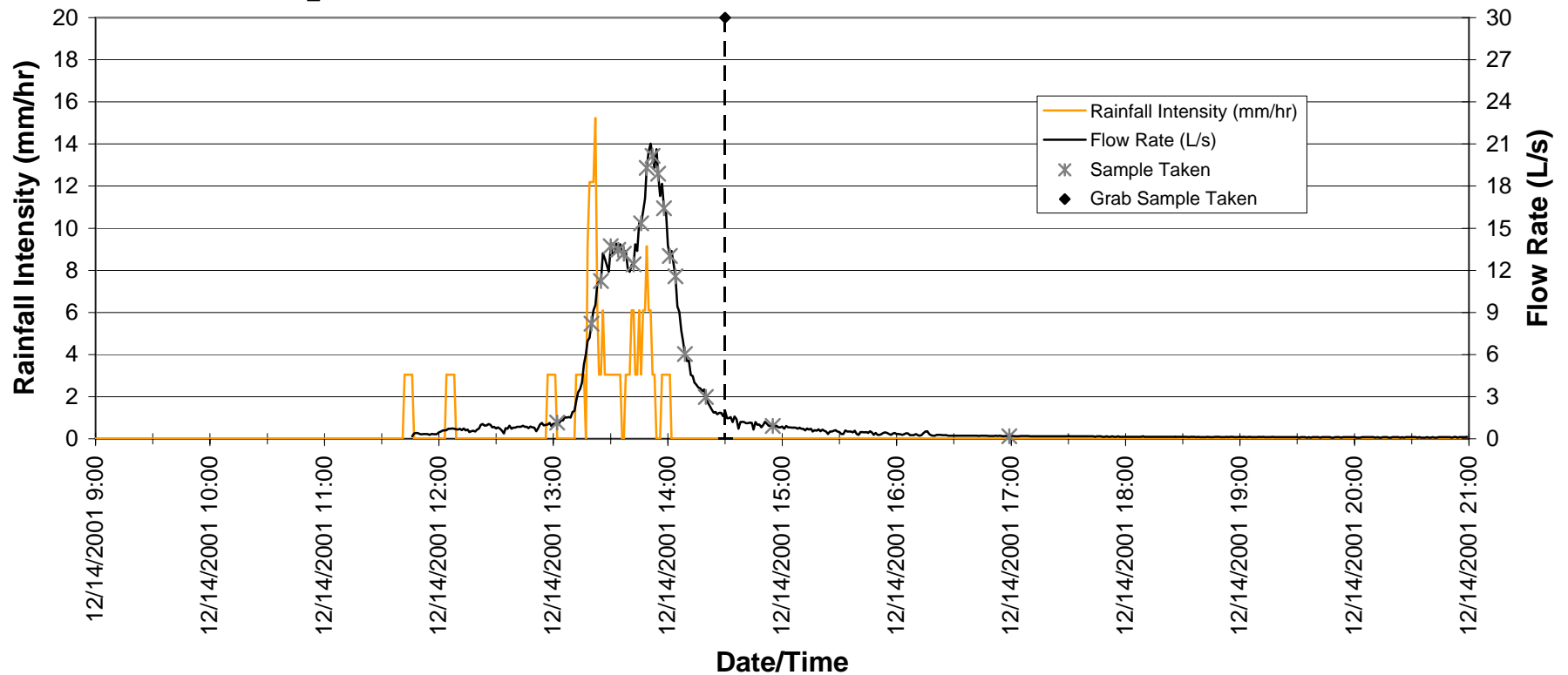
Start Date/Time: 12/03/01 03:32  
Stop Date/Time: 12/03/01 11:52  
Estimated Percent Capture: 100%  
Successful Aliquots: 29

Notes: No grab sample collected. 75 mm of backwater in the inlet pipe when the system was shut down.

## Event Summary

Site: 604R (12-214)  
Event: 12/14/2001\_2001-04

Catchment Area (ha): 4.43



### Rain Data

Start Date/Time: 12/14/01 11:42  
Stop Date/Time: 12/14/01 13:57  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/14/01 11:46  
Stop Date/Time: 12/14/01 20:59  
Total Flow Volume (L): 57921  
Peak Flow (L/s): 21.03  
Observed Runoff Coefficient: 0.303

### Sample Data

Start Date/Time: 12/14/01 11:46  
Stop Date/Time: 12/14/01 17:01  
Estimated Percent Capture: 97%  
Successful Aliquots: 18

Notes:

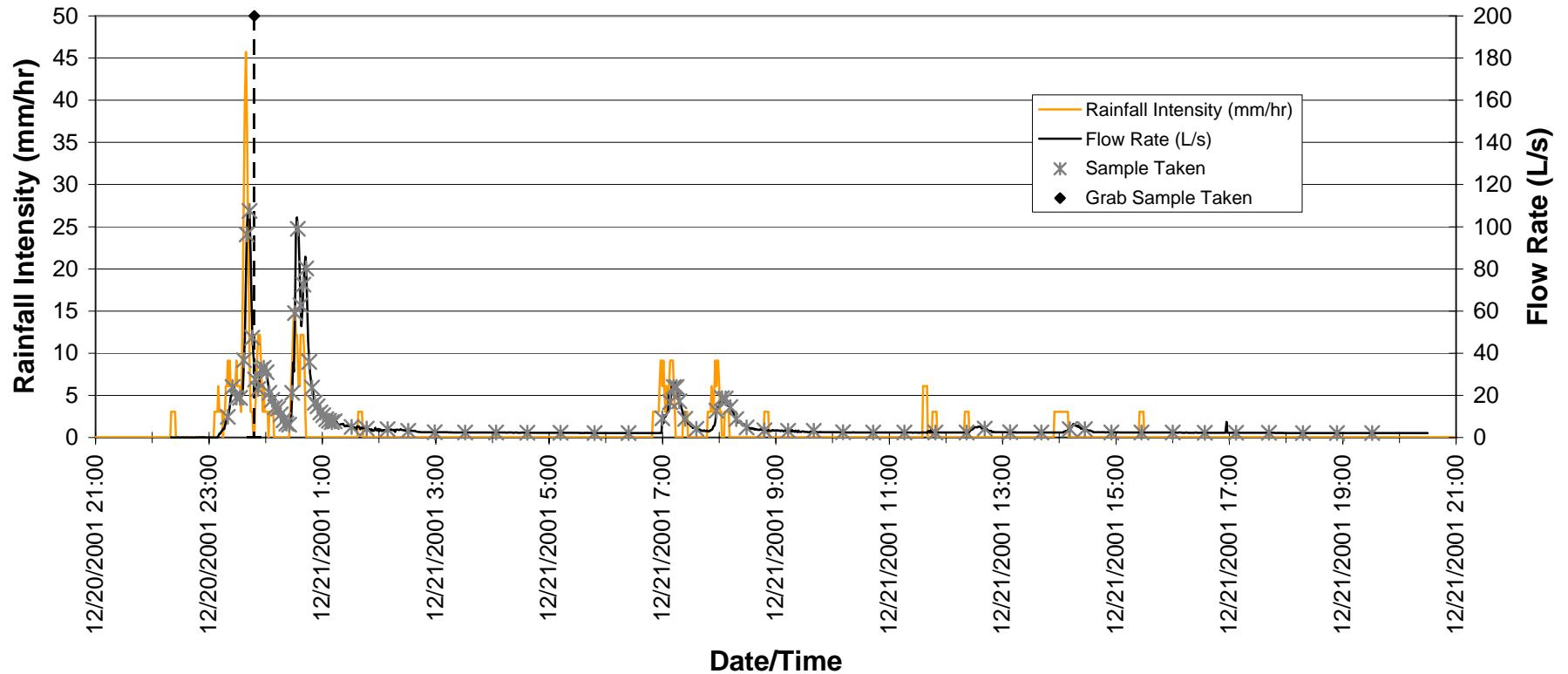
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## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 4.43

Event: 12/20/2001 to 12/21/2001\_2001-05



### Rain Data

Start Date/Time: 12/20/01 22:20  
 Stop Date/Time: 12/21/01 15:25  
 Event Rain (mm): 18.03  
 Max Intensity (mm/hr): 45.72

### Runoff Data

Start Date/Time: 12/20/01 22:20  
 Stop Date/Time: 12/21/01 20:30  
 Total Flow Volume (L): 437439  
 Peak Flow (L/s): 107.54  
 Observed Runoff Coefficient: 0.548

### Sample Data

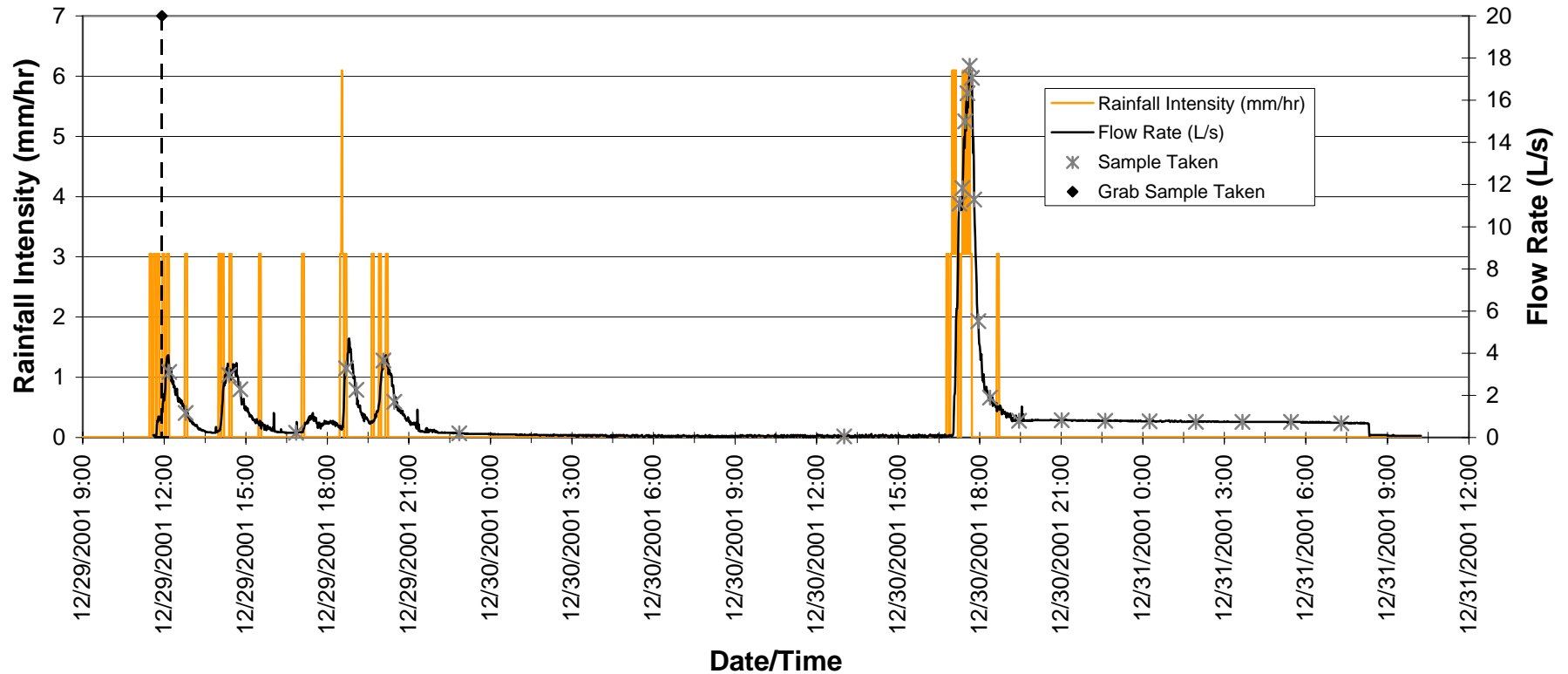
Start Date/Time: 12/20/01 22:20  
 Stop Date/Time: 12/21/01 19:33  
 Estimated Percent Capture: 96%  
 Successful Aliquots: 83

Notes: Bottles changed out during storm. Slight backwater condition existed prior to storm event.

## Event Summary

Site: 604R (12-214)  
Event: 12/29/2001\_2001-06

Catchment Area (ha): 4.43



### Rain Data

Start Date/Time: 12/29/01 11:28  
Stop Date/Time: 12/30/01 18:38  
Event Rain (mm): 7.62  
Max Intensity (mm/hr): 6.10

### Runoff Data

Start Date/Time: 12/29/01 11:36  
Stop Date/Time: 12/31/01 10:14  
Total Flow Volume (L): 133046  
Peak Flow (L/s): 17.63  
Observed Runoff Coefficient: 0.394

### Sample Data

Start Date/Time: 12/29/01 11:36  
Stop Date/Time: 12/31/01 07:20  
Estimated Percent Capture: 98%  
Successful Aliquots: 28

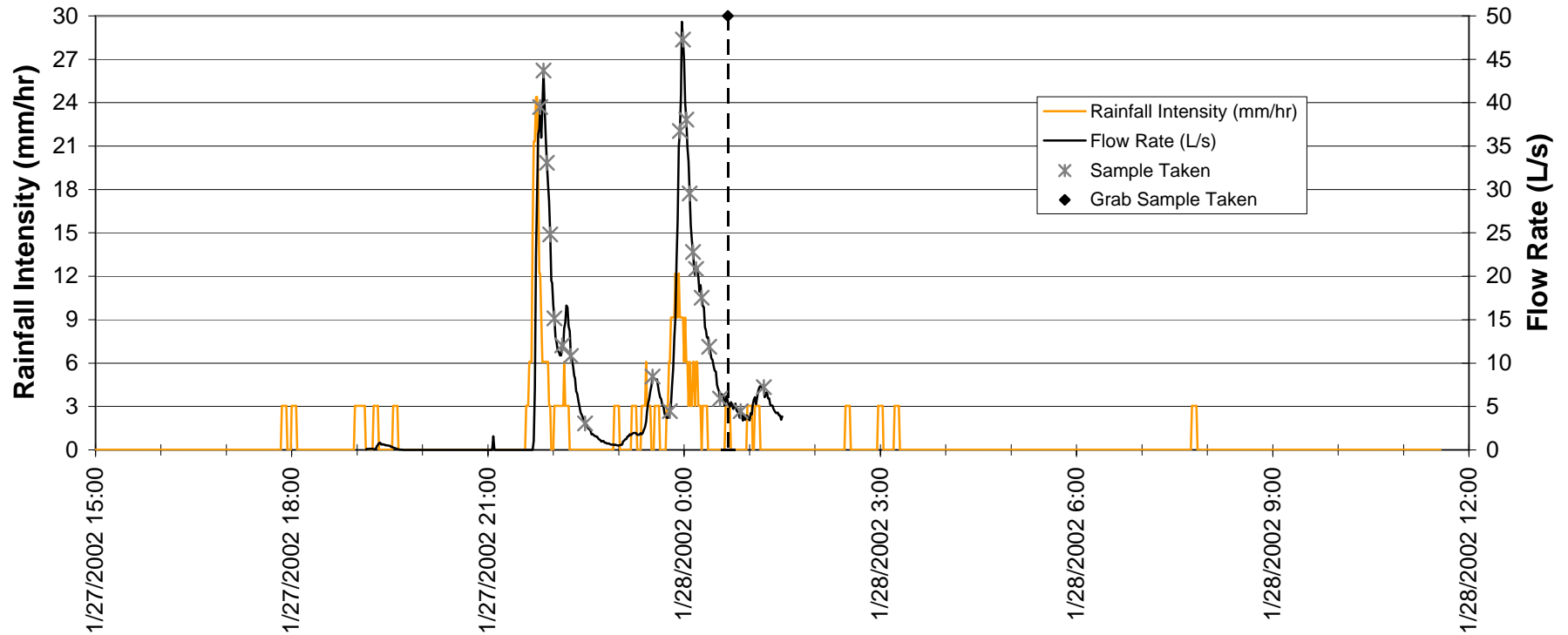
Notes: Less than 15 mm of standing water in pipe from 12/21/01 storm event.

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 4.43

Event: 1/27/2002 to 1/28/2002\_2001-07



### Date/Time

#### Rain Data

Start Date/Time: 01/27/02 17:51  
 Stop Date/Time: 01/28/02 07:46  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 24.38

#### Runoff Data

Start Date/Time: 01/27/02 19:08  
 Stop Date/Time: 01/28/02 11:34  
 Total Flow Volume (L): 137184  
 Peak Flow (L/s): 49.33  
 Observed Runoff Coefficient: 0.239

#### Sample Data

Start Date/Time: 01/27/02 19:08  
 Stop Date/Time: 01/28/02 01:14  
 Estimated Percent Capture: 89%  
 Successful Aliquots: 21

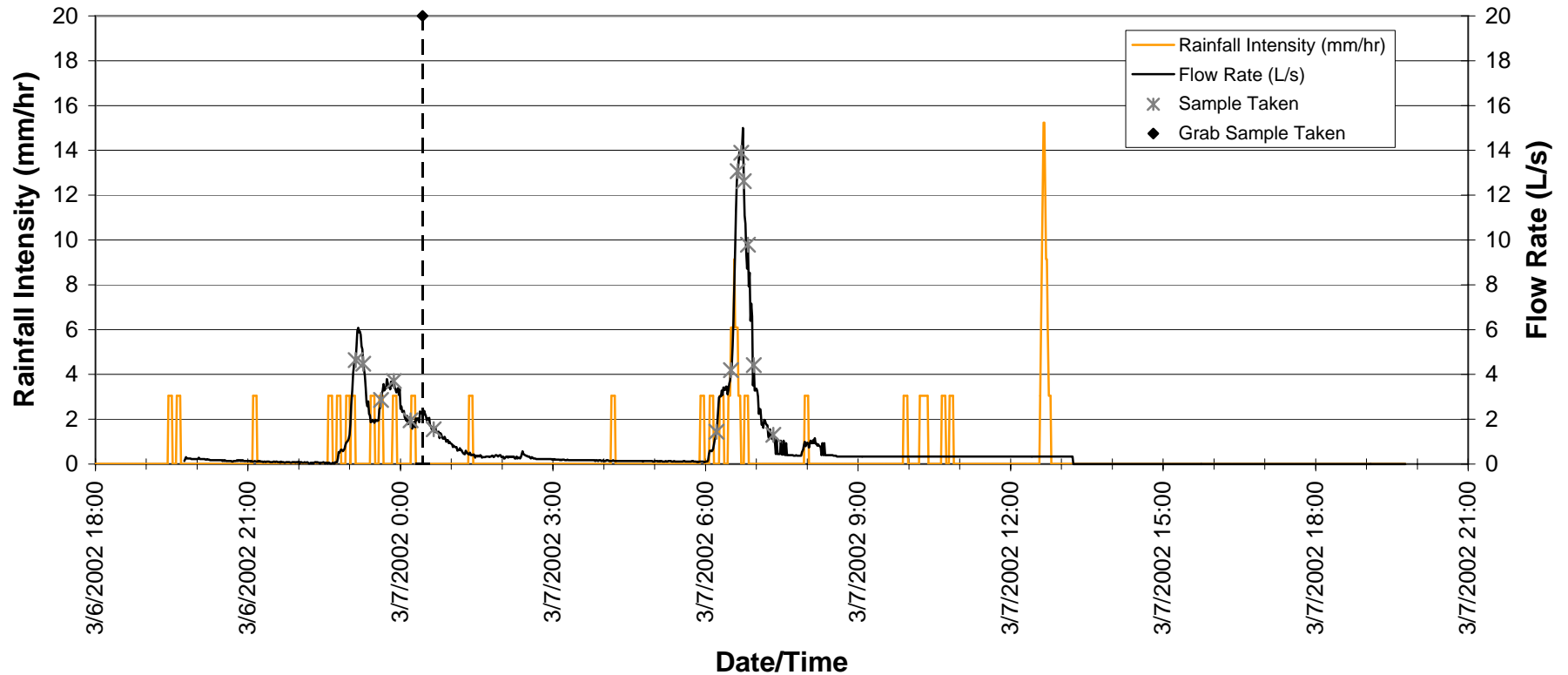
Notes: The flow meter was accidentally shut down at 1:30 am. It is estimated that there was an additional 11,685 L of flow after the flow meter was shut down. This flow has been factored into the percent capture (132,316 L captured out of approximately 148,984 L of total flow).

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 4.43

Event: 3/6/2002 to 3/7/2002\_2001-08



### Rain Data

Start Date/Time: 03/06/02 19:26  
 Stop Date/Time: 03/07/02 12:43  
 Event Rain (mm): 8.89  
 Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 03/06/02 19:45  
 Stop Date/Time: 03/07/02 19:46  
 Total Flow Volume (L): 55374  
 Peak Flow (L/s): 15.00  
 Observed Runoff Coefficient: 0.141

### Sample Data

Start Date/Time: 03/06/02 19:45  
 Stop Date/Time: 03/07/02 07:23  
 Estimated Percent Capture: 84%  
 Successful Aliquots: 14

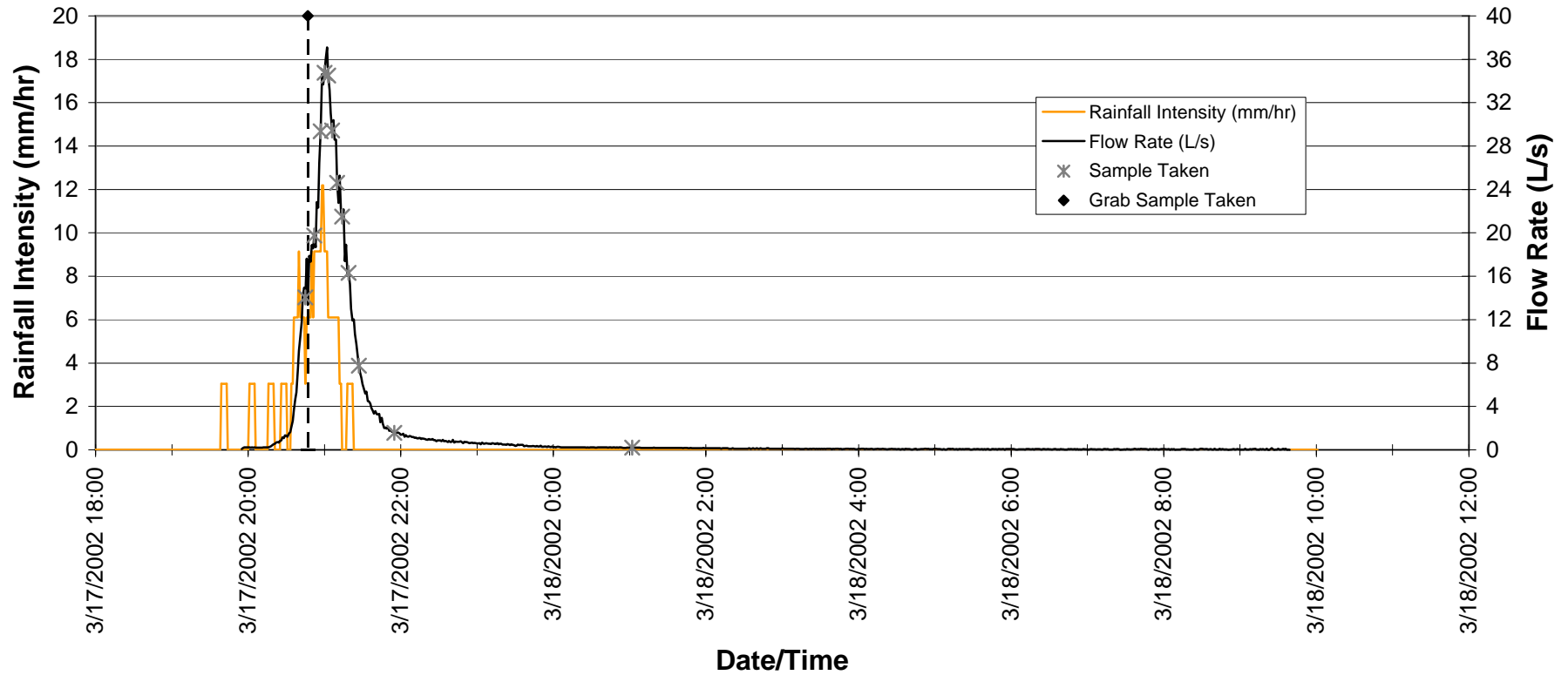
Notes: Water backed up in pipe to sensor following rainfall. Adjusted flow to zero 30 minutes after last measured rainfall.

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 4.43

Event: 3/17/2002 to 3/18/2002\_2001-09



### Rain Data

Start Date/Time: 03/17/02 19:39  
Stop Date/Time: 03/17/02 21:18  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 03/17/02 19:55  
Stop Date/Time: 03/18/02 09:39  
Total Flow Volume (L): 77749  
Peak Flow (L/s): 37.10  
Observed Runoff Coefficient: 0.300

### Sample Data

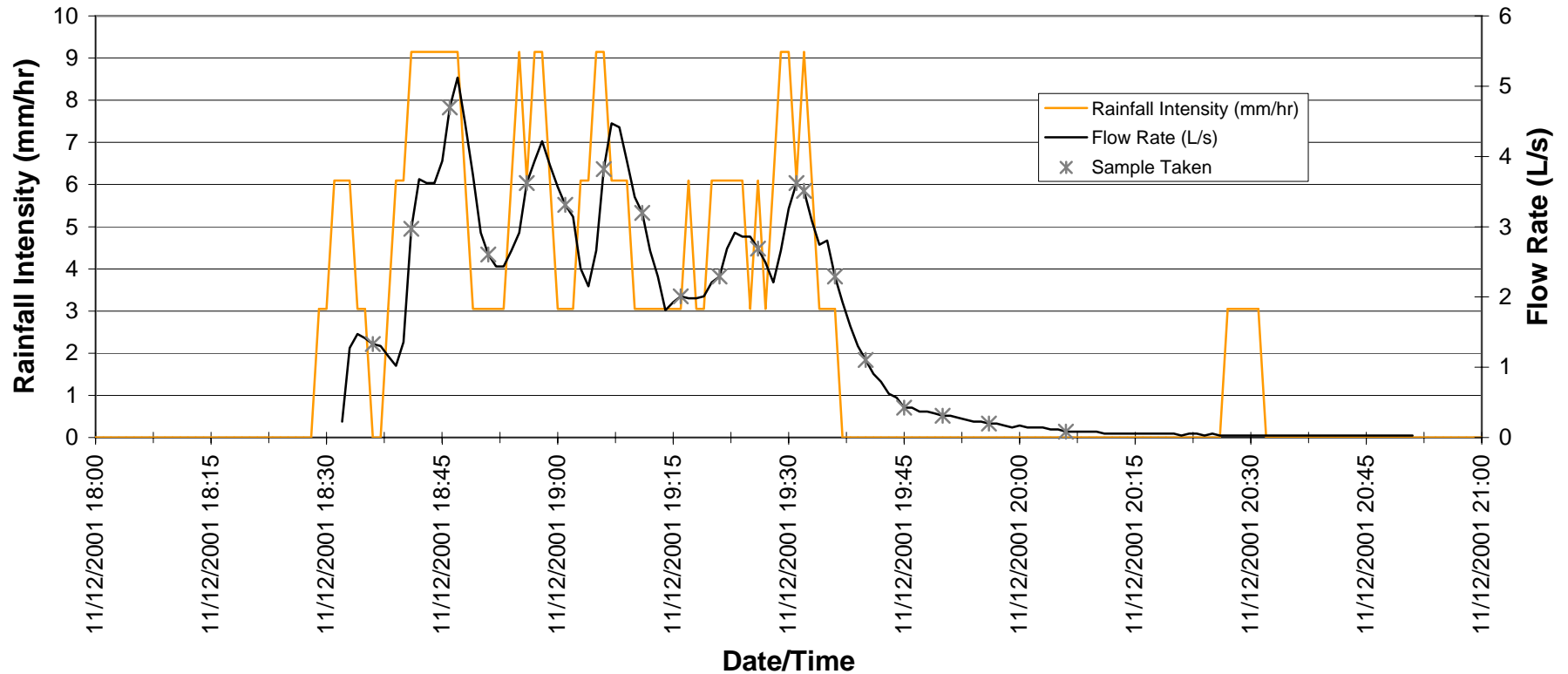
Start Date/Time: 03/17/02 19:55  
Stop Date/Time: 03/18/02 01:04  
Estimated Percent Capture: 97%  
Successful Aliquots: 12

Notes:

## Event Summary

Site: 604R (12-215)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 0.2



### Rain Data

Start Date/Time: 11/12/01 18:29  
Stop Date/Time: 11/12/01 20:27  
Event Rain (mm): 6.35  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/12/01 18:32  
Stop Date/Time: 11/12/01 20:51  
Total Flow Volume (L): 11883  
Peak Flow (L/s): 5.12  
Observed Runoff Coefficient: 0.936

### Sample Data

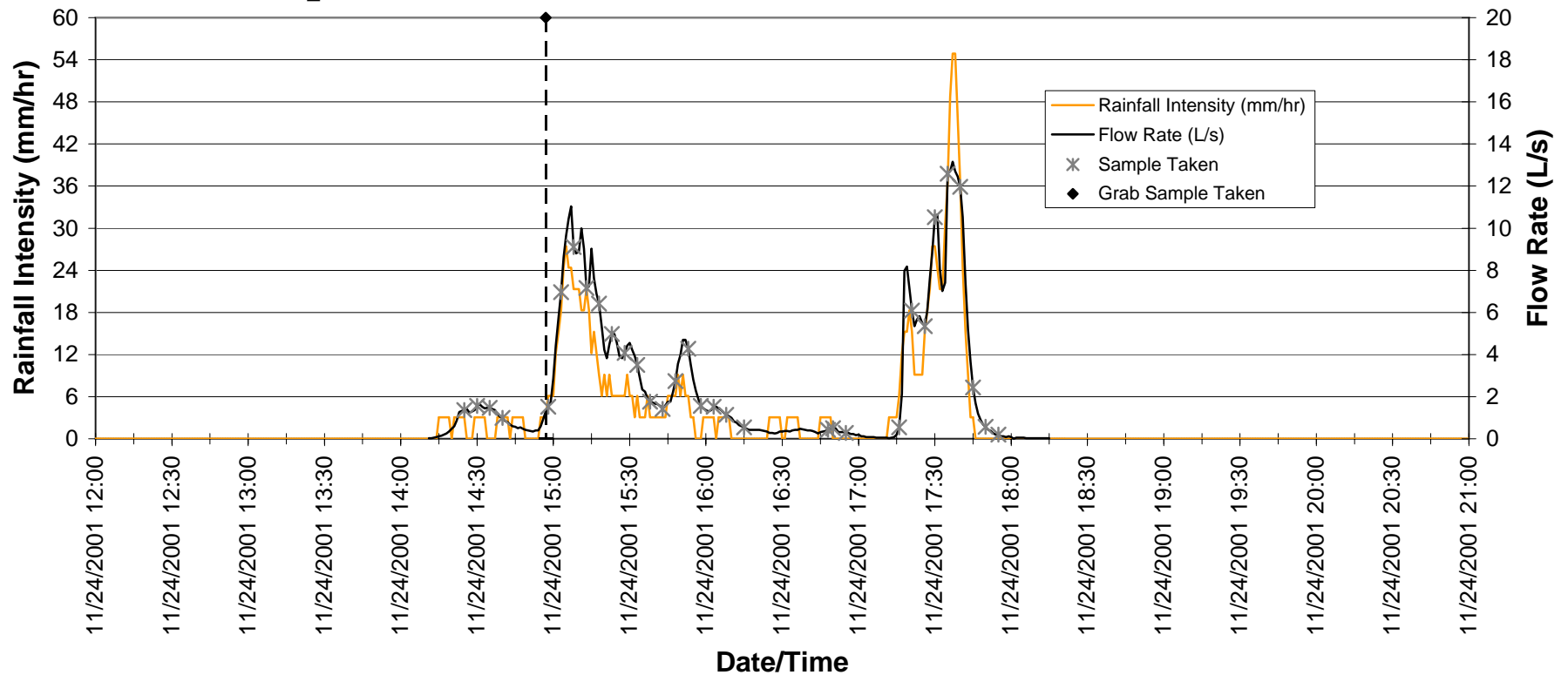
Start Date/Time: 11/12/01 18:32  
Stop Date/Time: 11/12/01 20:06  
Estimated Percent Capture: 83%  
Avg. Successful Aliquots/Bottle: 17  
Max. Successful Aliquots (Bottle#1): 19

Notes: No grab sample collected. Flow was not observed at each monitoring site at the same time.

## Event Summary

Site: 604R (12-215)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 0.2



### Rain Data

Start Date/Time: 11/24/01 14:15  
Stop Date/Time: 11/24/01 17:41  
Event Rain (mm): 23.11  
Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 11/24/01 14:11  
Stop Date/Time: 11/24/01 18:15  
Total Flow Volume (L): 35580  
Peak Flow (L/s): 13.16  
Observed Runoff Coefficient: 0.770

### Sample Data

Start Date/Time: 11/24/01 14:11  
Stop Date/Time: 11/24/01 17:59  
Estimated Percent Capture: 89%  
Avg. Successful Aliquots/Bottle: 31  
Max. Successful Aliquots (Bottle#1): 32

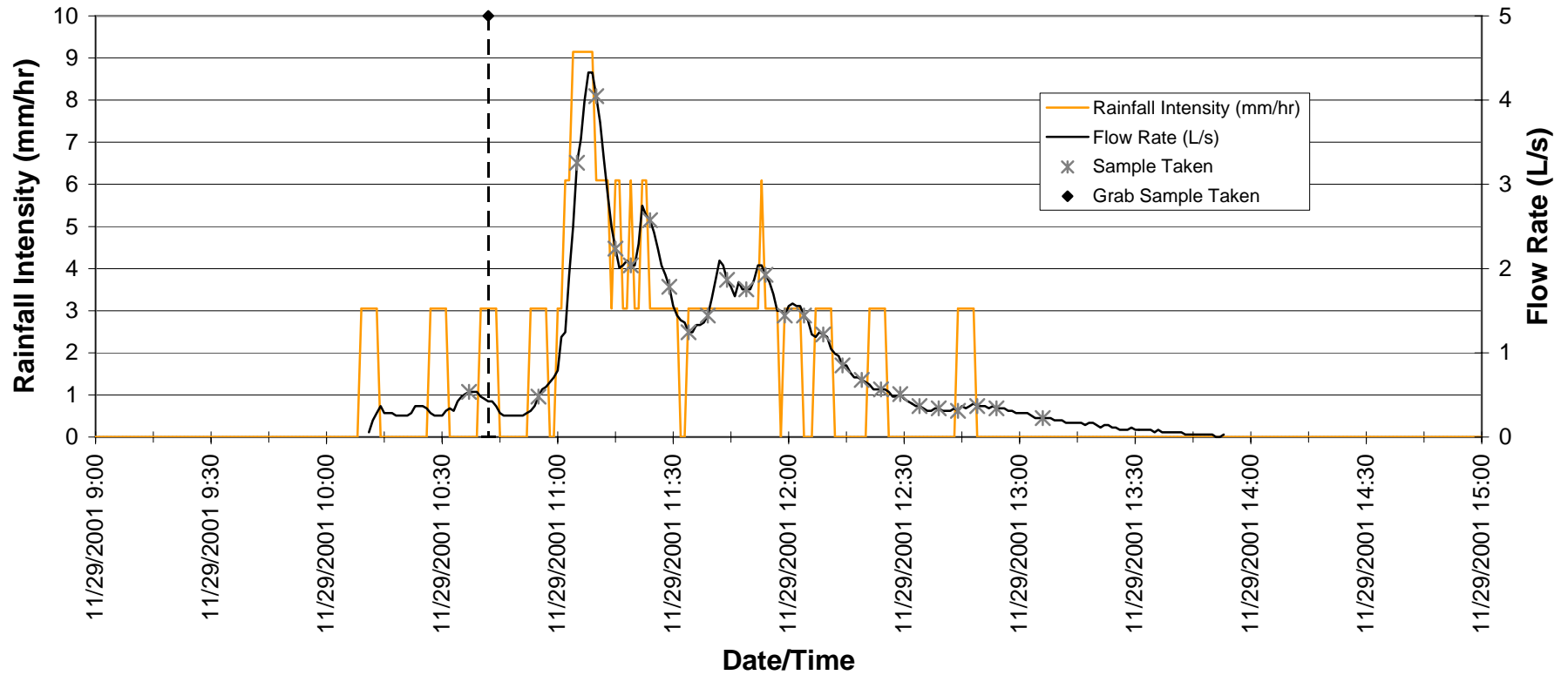
Notes:

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## Event Summary

Site: 604R (12-215)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 0.2



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:11  
Stop Date/Time: 11/29/01 13:53  
Total Flow Volume (L): 11330  
Peak Flow (L/s): 4.33  
Observed Runoff Coefficient: 0.929

### Sample Data

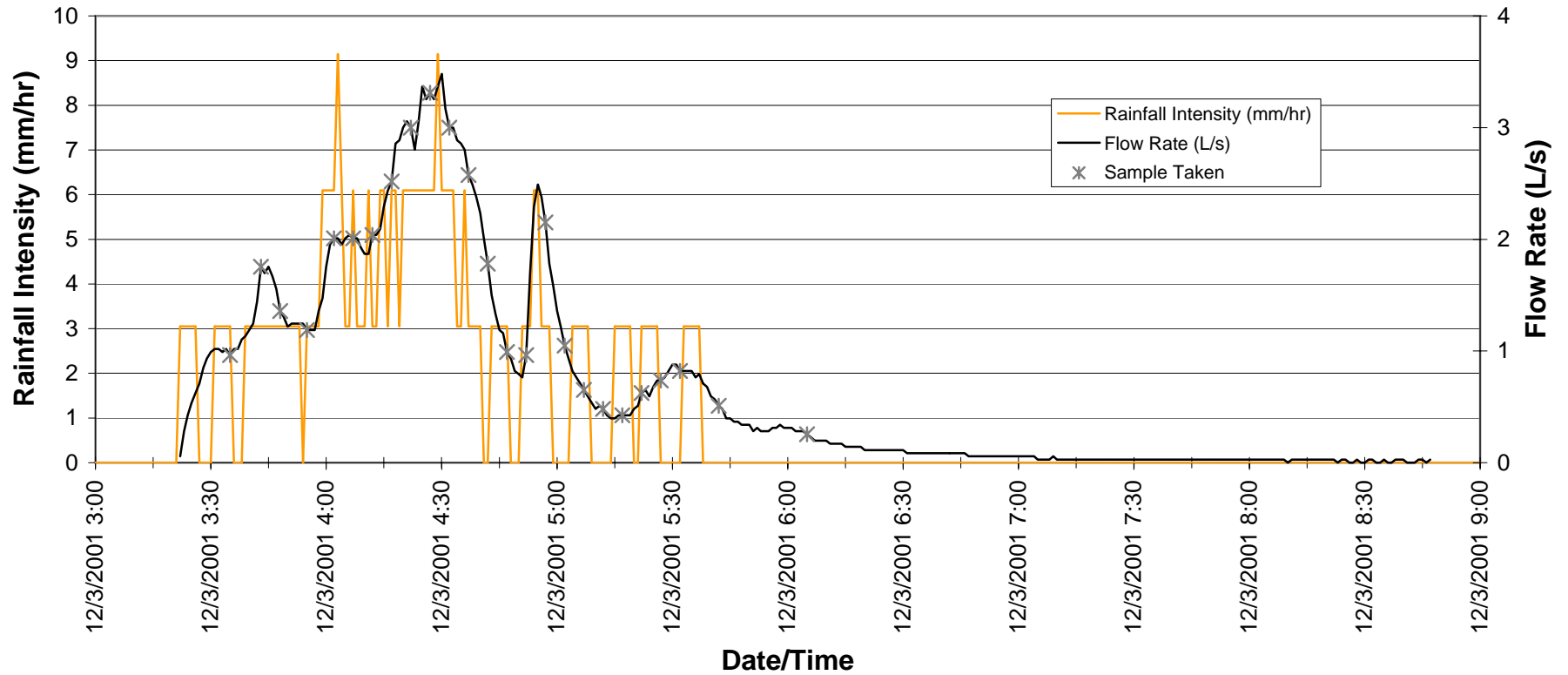
Start Date/Time: 11/29/01 10:11  
Stop Date/Time: 11/29/01 13:09  
Estimated Percent Capture: 98%  
Successful Aliquots: 26

Notes:

## Event Summary

Site: 604R (12-215)  
Event: 12/3/2001\_2001-04

Catchment Area (ha): 0.2



### Rain Data

Start Date/Time: 12/03/01 03:22  
Stop Date/Time: 12/03/01 05:33  
Event Rain (mm): 6.86  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 12/03/01 03:22  
Stop Date/Time: 12/03/01 08:47  
Total Flow Volume (L): 13262  
Peak Flow (L/s): 3.48  
Observed Runoff Coefficient: 0.967

### Sample Data

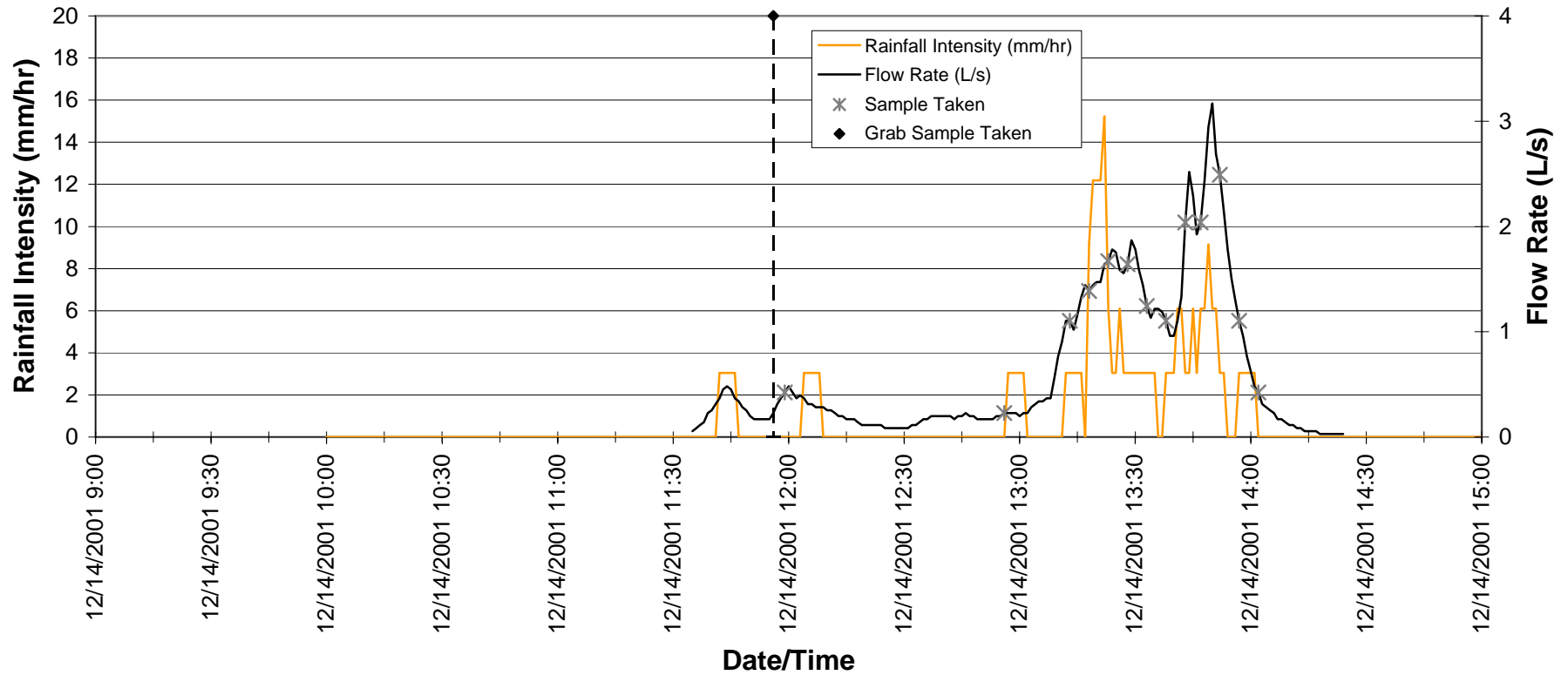
Start Date/Time: 12/03/01 03:22  
Stop Date/Time: 12/03/01 06:08  
Estimated Percent Capture: 95%  
Successful Aliquots: 25

Notes: No grab sample collected.

## Event Summary

Site: 604R (12-215)  
Event: 12/14/2001\_2001-05

Catchment Area (ha): 0.2



### Rain Data

Start Date/Time: 12/14/01 11:42  
Stop Date/Time: 12/14/01 13:57  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/14/01 11:35  
Stop Date/Time: 12/14/01 14:24  
Total Flow Volume (L): 6236  
Peak Flow (L/s): 3.17  
Observed Runoff Coefficient: 0.722

### Sample Data

Start Date/Time: 12/14/01 11:35  
Stop Date/Time: 12/14/01 14:05  
Estimated Percent Capture: 95%  
Successful Aliquots: 14

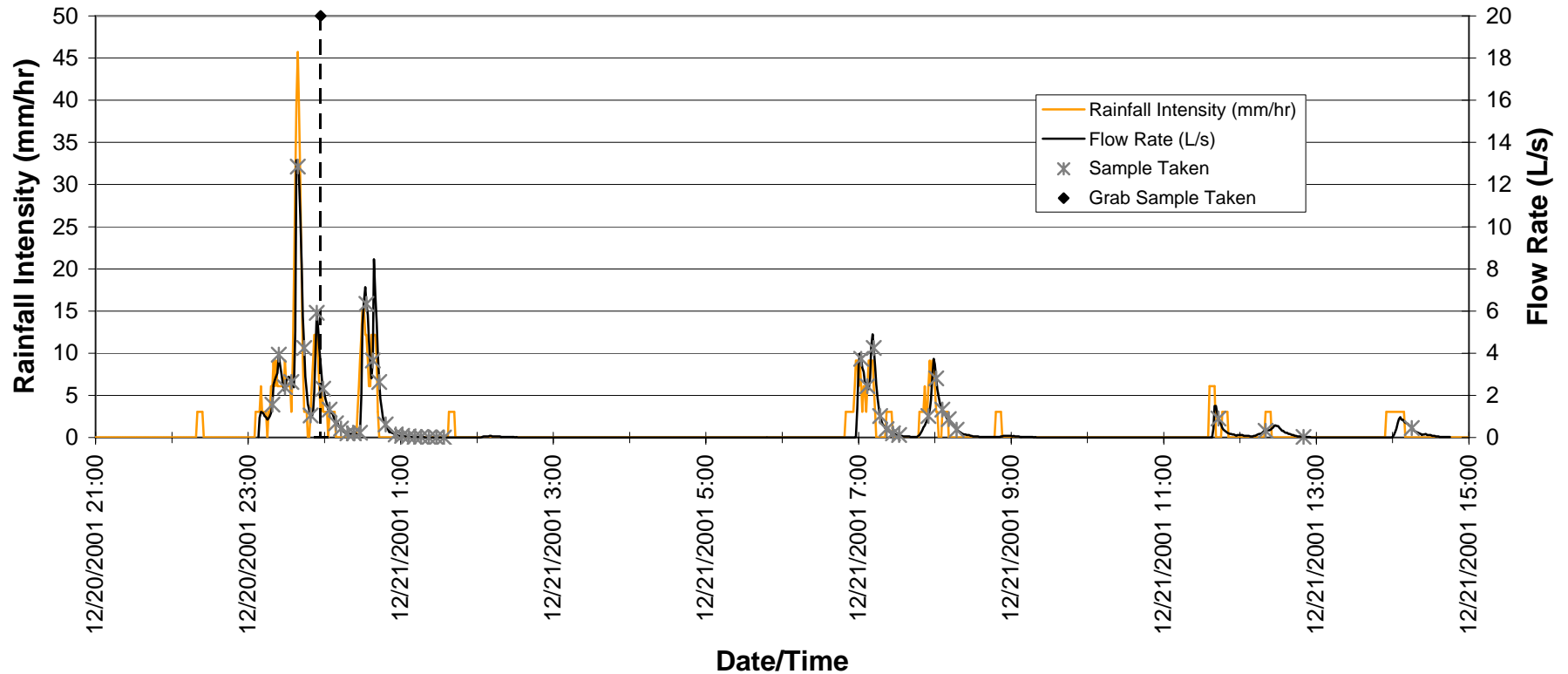
Notes:

## Event Summary

Site: 604R (12-215)

Catchment Area (ha): 0.2

Event: 12/20/2001 to 12/21/2001\_2001-06



### Rain Data

Start Date/Time: 12/20/01 22:20  
Stop Date/Time: 12/21/01 15:25  
Event Rain (mm): 18.03  
Max Intensity (mm/hr): 45.72

### Runoff Data

Start Date/Time: 12/20/01 23:08  
Stop Date/Time: 12/21/01 14:45  
Total Flow Volume (L): 24708  
Peak Flow (L/s): 13.16  
Observed Runoff Coefficient: 0.685

### Sample Data

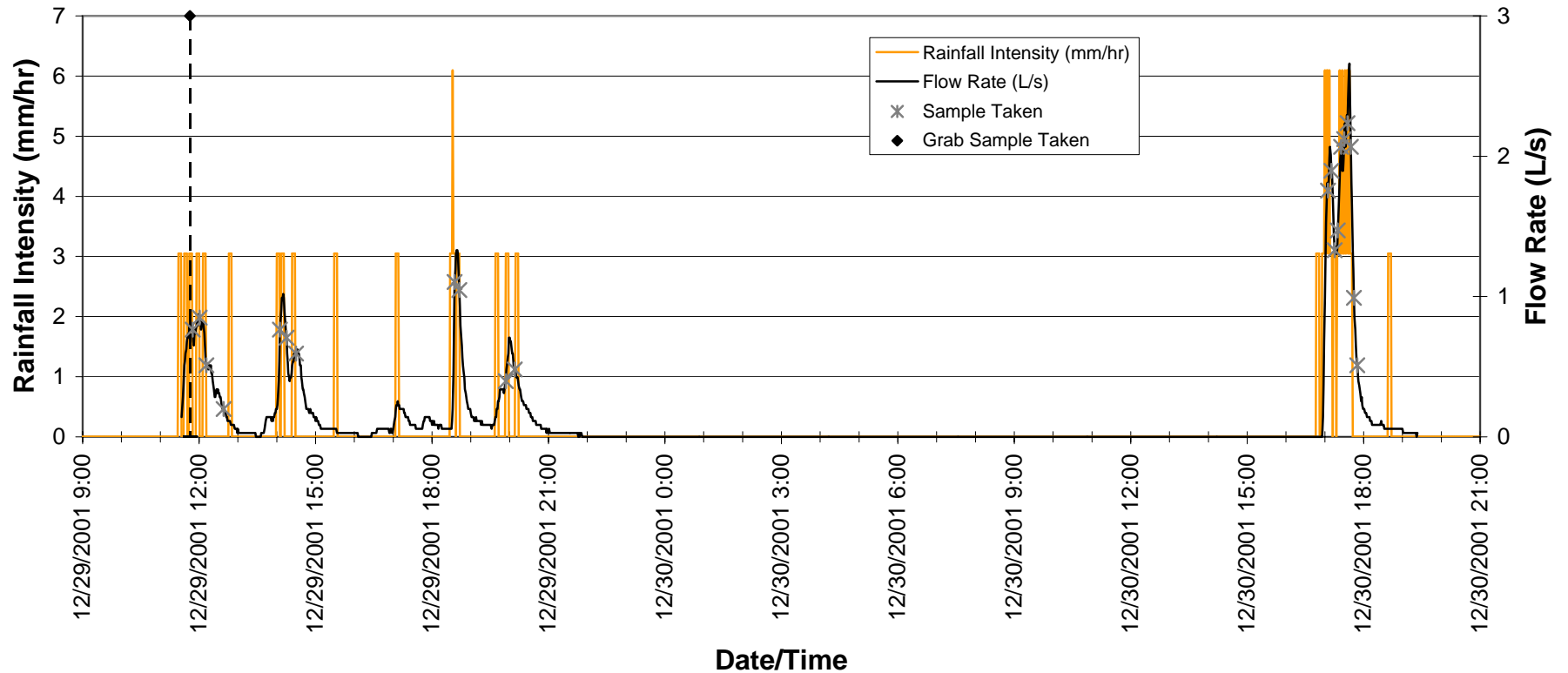
Start Date/Time: 12/20/01 23:08  
Stop Date/Time: 12/21/01 14:18  
Estimated Percent Capture: 96%  
Successful Aliquots: 44

Notes:

## Event Summary

Site: 604R (12-215)  
Event: 12/29/2001\_2001-07

Catchment Area (ha): 0.2

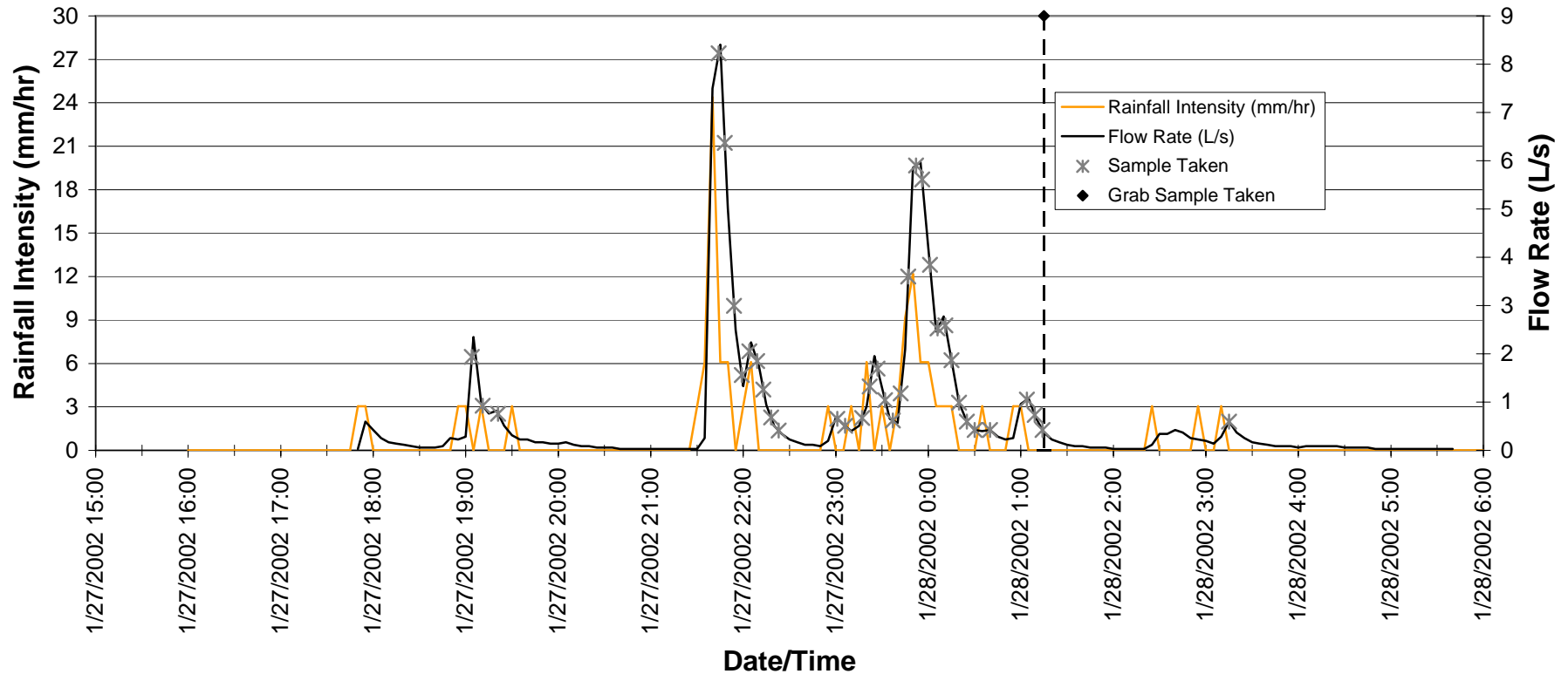


## Event Summary

Site: 604R (12-215)

Catchment Area (ha): 0.2

Event: 1/27/2002 to 1/28/2002\_2001-08



### Rain Data

Start Date/Time: 01/27/02 17:50  
 Stop Date/Time: 01/28/02 07:45  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 01/27/02 17:50  
 Stop Date/Time: 01/28/02 05:40  
 Total Flow Volume (L): 26446  
 Peak Flow (L/s): 8.41  
 Observed Runoff Coefficient: 1.021

### Sample Data

Start Date/Time: 01/27/02 17:50  
 Stop Date/Time: 01/28/02 03:17  
 Estimated Percent Capture: 90%  
 Avg. Successful Aliquots/Bottle: 35  
 Max. Successful Aliquots (Bottle#2): 36

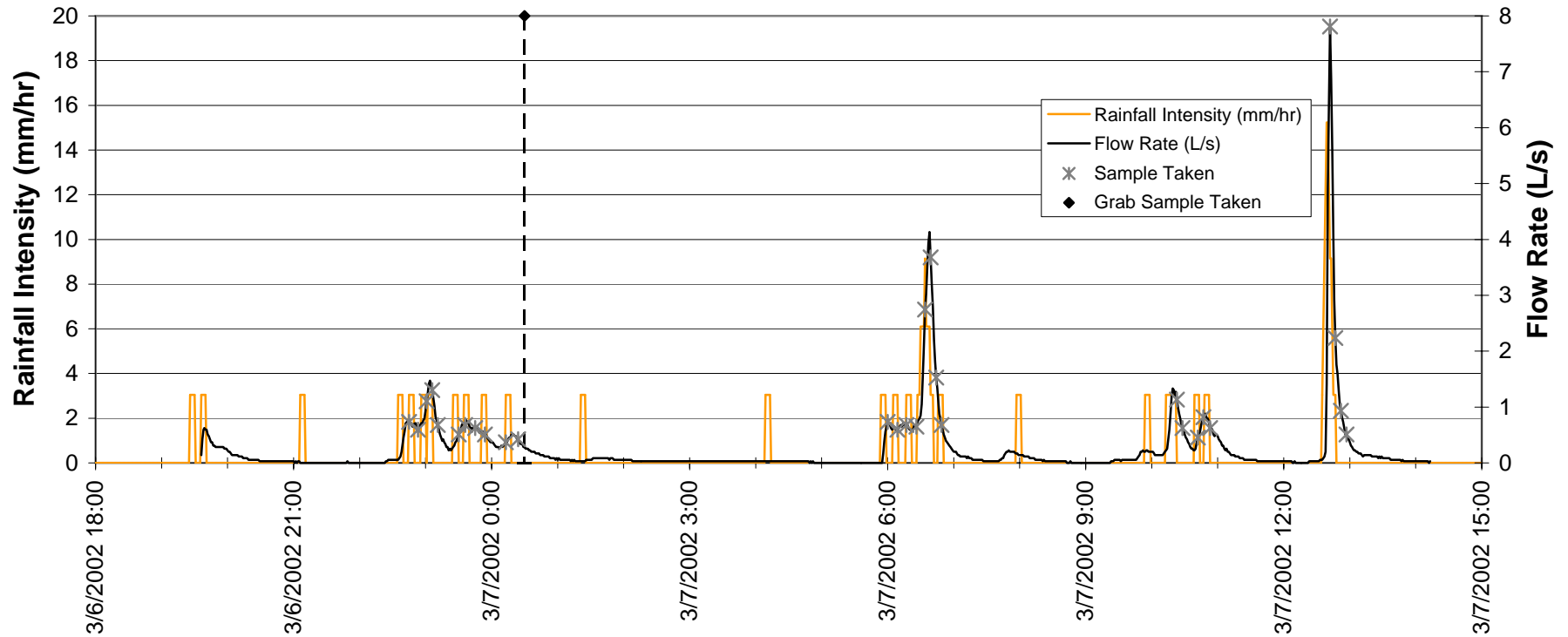
Notes: Sprinklers were observed contributing flow to 12-215 during the storm. Sprinklers released water to the onramp that flowed into the drop inlet for 12-215. The sprinkler water is the likely explanation for the elevated runoff coefficient.

## Event Summary

Site: 604R (12-215)

Catchment Area (ha): 0.2

Event: 3/6/2002 to 3/7/2002\_2001-09



### Date/Time

#### Rain Data

Start Date/Time: 03/06/02 19:26  
 Stop Date/Time: 03/07/02 12:43  
 Event Rain (mm): 8.89  
 Max Intensity (mm/hr): 15.24

#### Runoff Data

Start Date/Time: 03/06/02 19:36  
 Stop Date/Time: 03/07/02 14:13  
 Total Flow Volume (L): 16148  
 Peak Flow (L/s): 7.81  
 Observed Runoff Coefficient: 0.908

#### Sample Data

Start Date/Time: 03/06/02 19:36  
 Stop Date/Time: 03/07/02 13:04  
 Estimated Percent Capture: 83%  
 Avg. Successful Aliquots/Bottle: 29  
 Max. Successful Aliquots (Bottle#2): 30

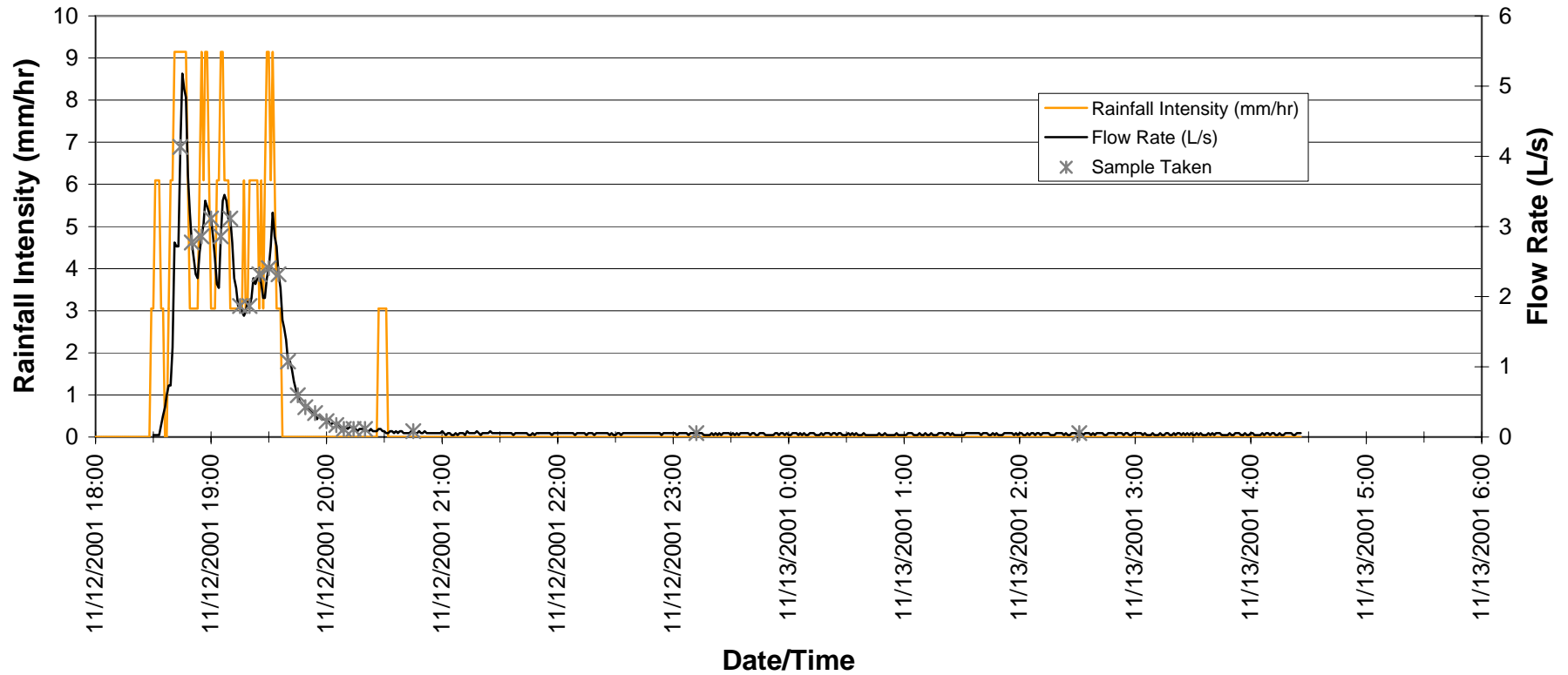
Notes:

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 11/12/2001 to 11/13/2001\_2001-01



### Rain Data

Start Date/Time: 11/12/01 18:29  
Stop Date/Time: 11/12/01 20:27  
Event Rain (mm): 6.35  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/12/01 18:30  
Stop Date/Time: 11/13/01 04:26  
Total Flow Volume (L): 11875  
Peak Flow (L/s): 5.18  
Observed Runoff Coefficient: 0.810

### Sample Data

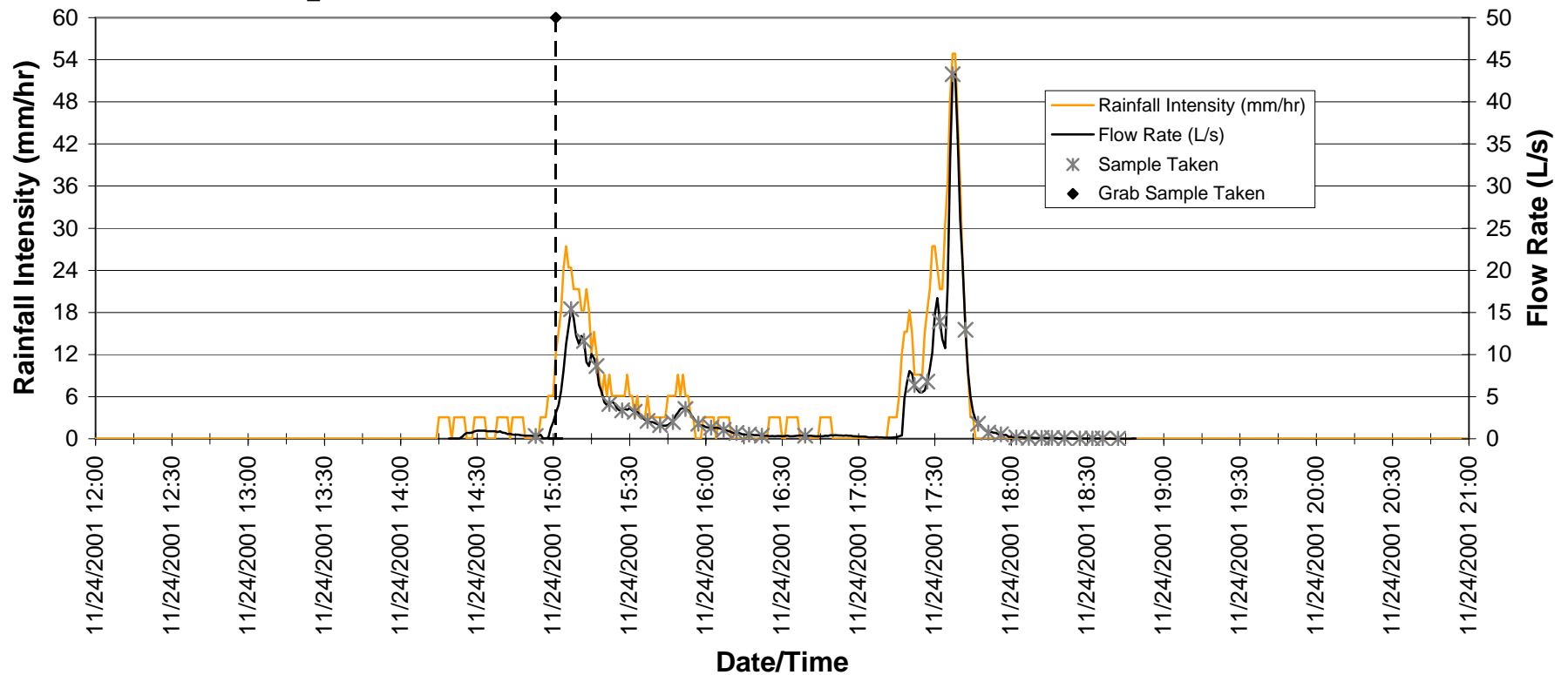
Start Date/Time: 11/12/01 18:30  
Stop Date/Time: 11/13/01 02:54  
Estimated Percent Capture: 96%  
Avg. Successful Aliquots/Bottle: 22  
Max. Successful Aliquots (Bottle#1): 23

Notes: No grab samples. Flow was not observed at each of the monitoring stations at the same time.

## Event Summary

Site: 604R (12-216)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 0.231



### Rain Data

Start Date/Time: 11/24/01 14:15  
Stop Date/Time: 11/24/01 17:41  
Event Rain (mm): 23.11  
Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 11/24/01 14:19  
Stop Date/Time: 11/24/01 18:49  
Total Flow Volume (L): 45989  
Peak Flow (L/s): 43.27  
Observed Runoff Coefficient: 0.861

### Sample Data

Start Date/Time: 11/24/01 14:19  
Stop Date/Time: 11/24/01 18:45  
Estimated Percent Capture: 99%  
Successful Aliquots: 35

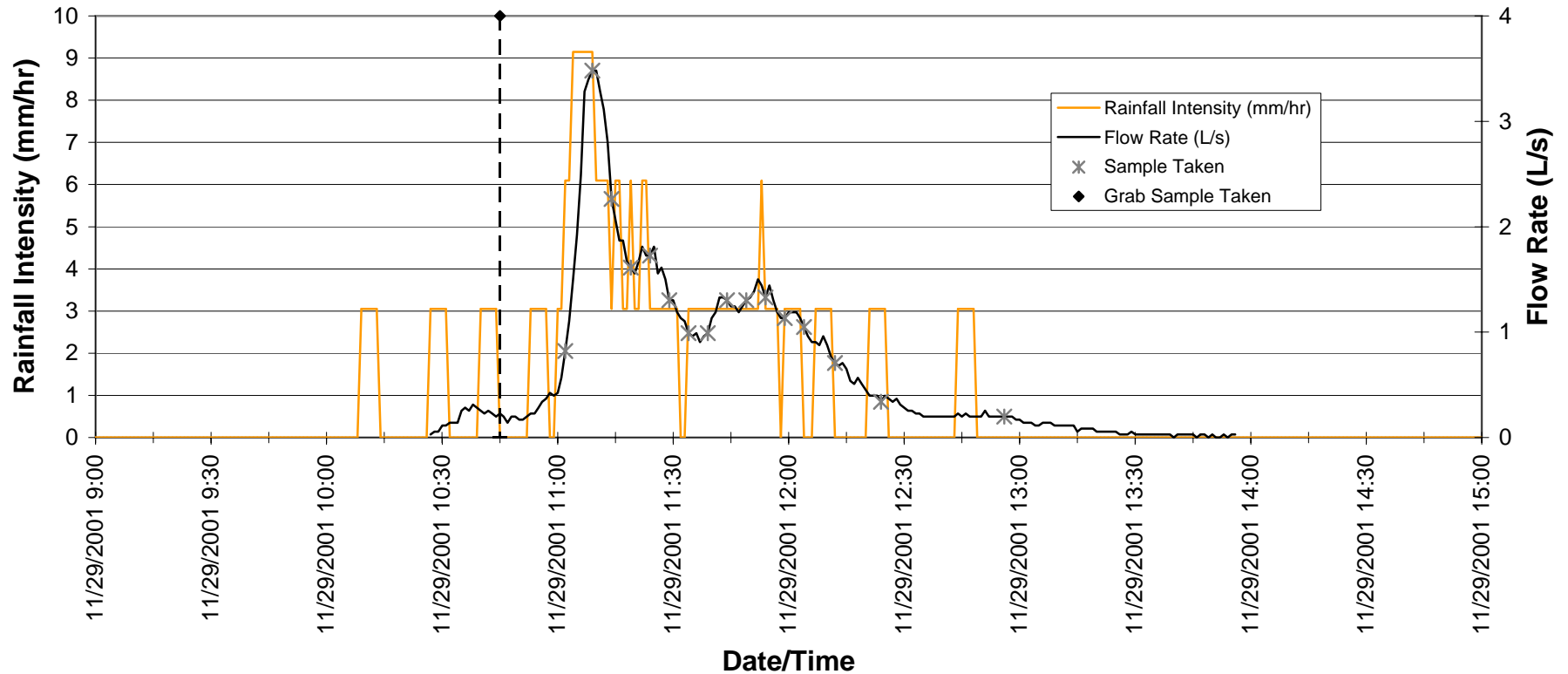
Notes:

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## Event Summary

Site: 604R (12-216)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 0.231



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:27  
Stop Date/Time: 11/29/01 13:56  
Total Flow Volume (L): 7974  
Peak Flow (L/s): 3.48  
Observed Runoff Coefficient: 0.566

### Sample Data

Start Date/Time: 11/29/01 10:27  
Stop Date/Time: 11/29/01 12:58  
Estimated Percent Capture: 97%  
Successful Aliquots: 16

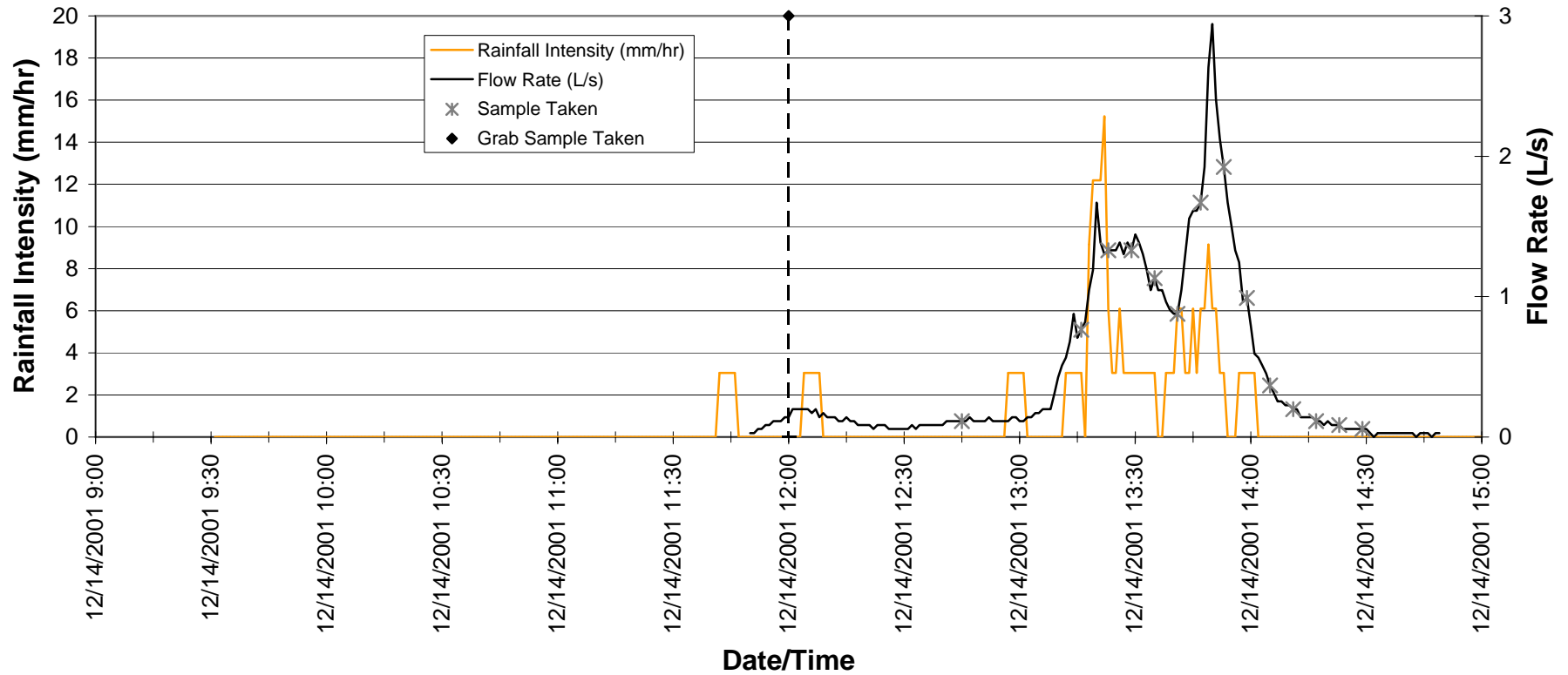
Notes:

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## Event Summary

Site: 604R (12-216)  
Event: 12/14/2001\_2001-04

Catchment Area (ha): 0.231



### Rain Data

Start Date/Time: 12/14/01 11:42  
Stop Date/Time: 12/14/01 13:57  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/14/01 11:50  
Stop Date/Time: 12/14/01 14:49  
Total Flow Volume (L): 4885  
Peak Flow (L/s): 2.94  
Observed Runoff Coefficient: 0.490

### Sample Data

Start Date/Time: 12/14/01 11:50  
Stop Date/Time: 12/14/01 14:31  
Estimated Percent Capture: 99%  
Successful Aliquots: 14

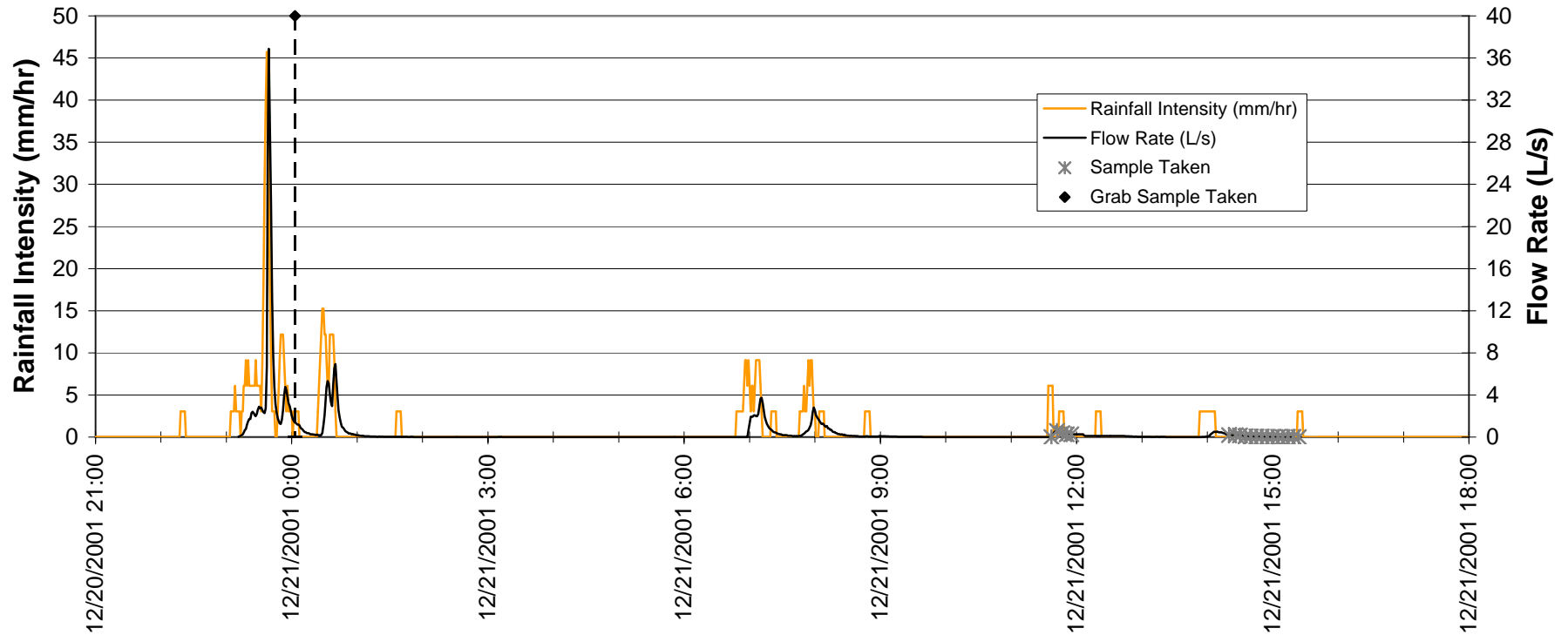
Notes:

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 12/20/2001 to 12/21/2001\_2001-05



### Date/Time

#### Rain Data

Start Date/Time: 12/20/01 22:18  
Stop Date/Time: 12/21/01 15:23  
Event Rain (mm): 18.03  
Max Intensity (mm/hr): 45.72

#### Runoff Data

Start Date/Time: 12/20/01 23:11  
Stop Date/Time: 12/21/01 15:18  
Total Flow Volume (L): 26445  
Peak Flow (L/s): 36.87  
Observed Runoff Coefficient: 0.635

#### Sample Data

Start Date/Time: 12/20/01 23:11  
Stop Date/Time: 12/21/01 15:27  
Estimated Percent Capture: 21-80%  
Avg. Successful Aliquots/Bottle: 18  
Max. Successful Aliquots (Bottle#1): 19

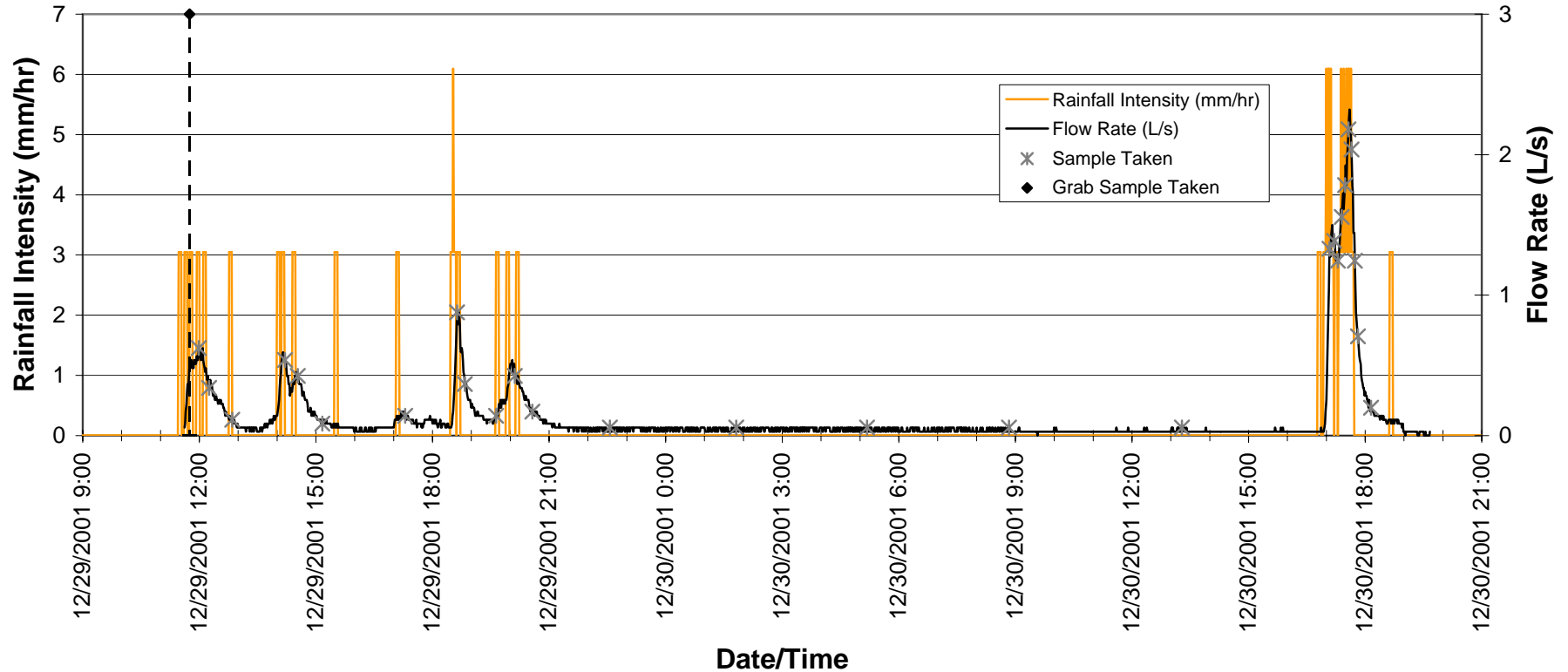
Notes: Due to a pump malfunction, samples overflowed between 0152 on 12/21/01 to 11:54 on 12/21/01. When bottles (bottles were full) were pulled at 0152, sample collection had been 100% successful. Due to the malfunction and large number of data points in the sampler history, the sample successes prior to 0152 were overwritten.

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 12/29/2001 to 12/30/2001\_2001-06



### Rain Data

Start Date/Time: 12/29/01 11:28  
Stop Date/Time: 12/30/01 18:38  
Event Rain (mm): 7.62  
Max Intensity (mm/hr): 6.10

### Runoff Data

Start Date/Time: 12/29/01 11:37  
Stop Date/Time: 12/30/01 19:40  
Total Flow Volume (L): 14235  
Peak Flow (L/s): 2.32  
Observed Runoff Coefficient: 0.809

### Sample Data

Start Date/Time: 12/29/01 11:37  
Stop Date/Time: 12/30/01 18:12  
Estimated Percent Capture: 97%  
Successful Aliquots: 27

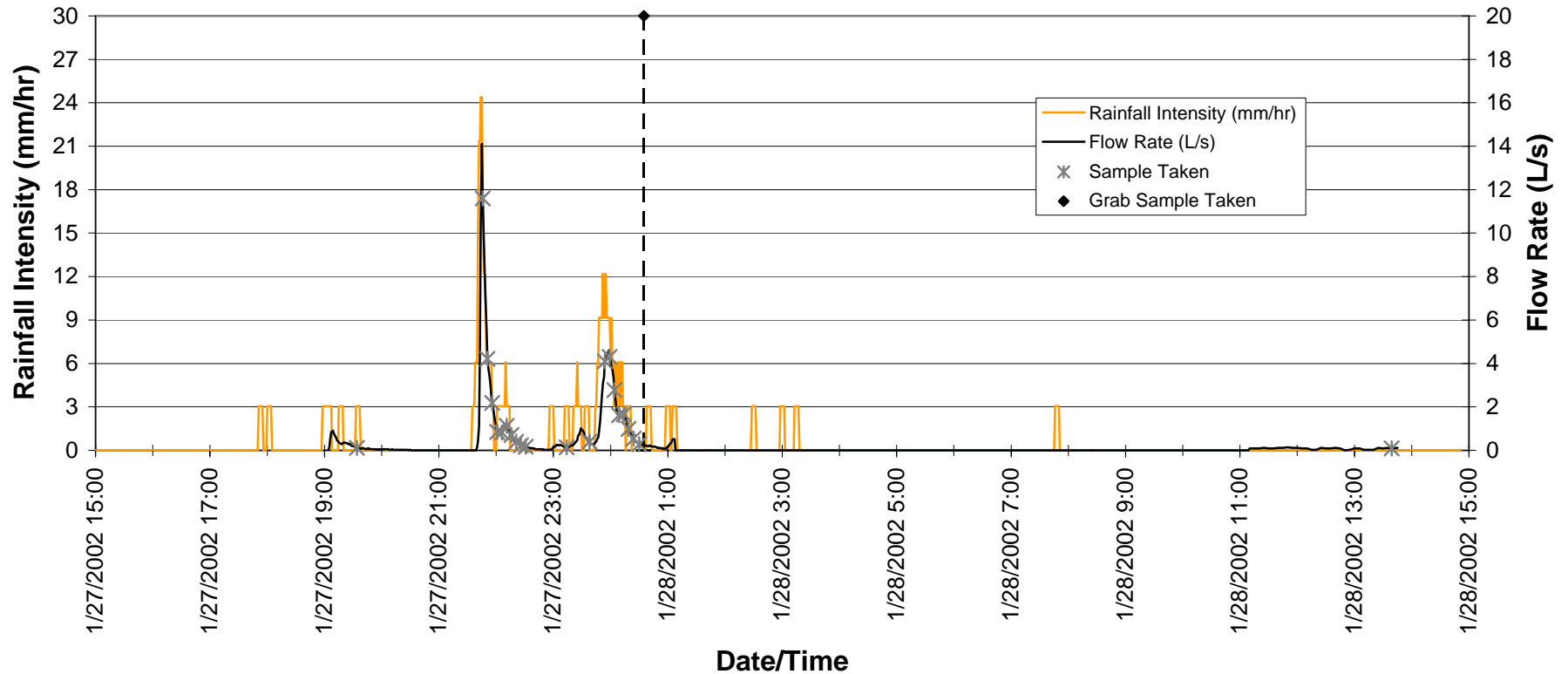
Notes:

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 1/27/2002 to 1/28/2002\_2001-07



### Rain Data

Start Date/Time: 01/27/02 17:51  
Stop Date/Time: 01/28/02 07:46  
Event Rain (mm): 12.95  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 01/27/02 19:04  
Stop Date/Time: 01/28/02 13:42  
Total Flow Volume (L): 15553  
Peak Flow (L/s): 14.12  
Observed Runoff Coefficient: 0.520

### Sample Data

Start Date/Time: 01/27/02 19:04  
Stop Date/Time: 01/28/02 13:42  
Estimated Percent Capture: 93%  
Successful Aliquots: 22

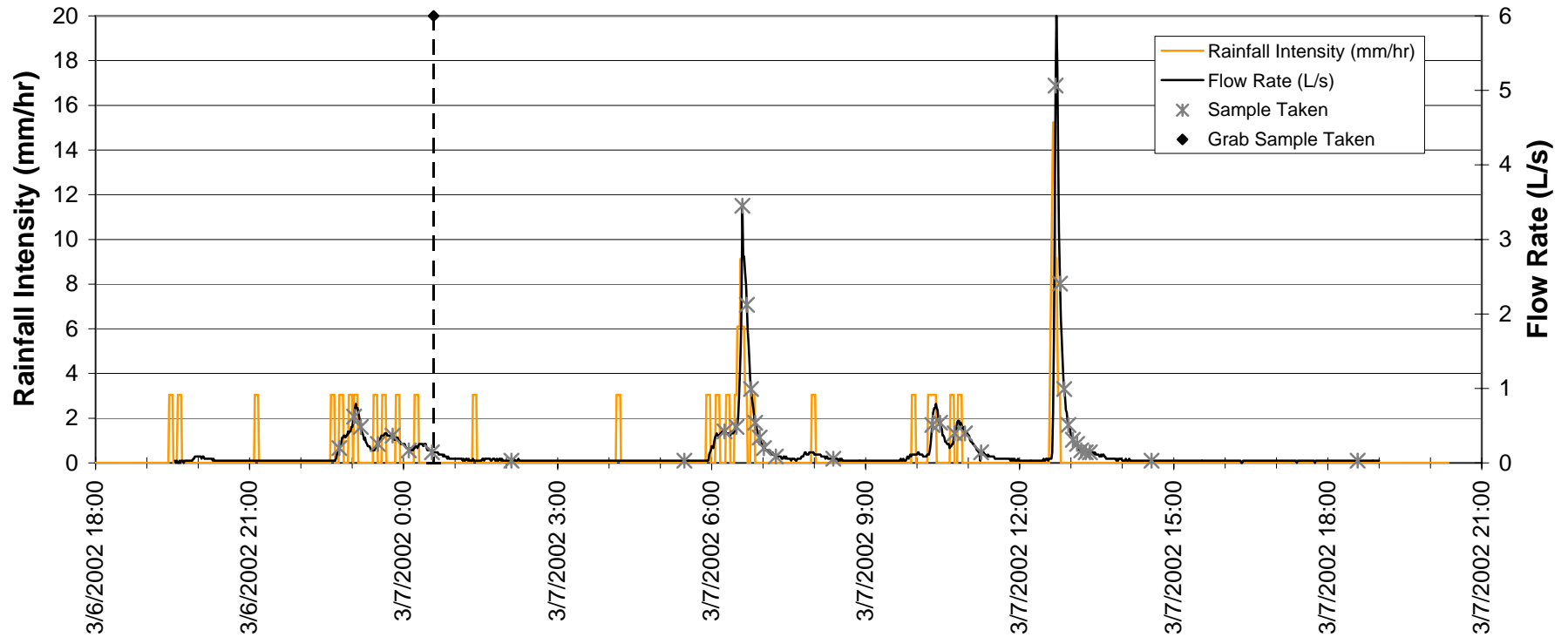
Notes: The flow meter was accidentally shut down at 1:08 am. It is estimated that there was an additional 1,260 L of flow after the flow meter was shut down. This flow has been factored into the percent capture (15,553 L captured out of approximately 16,813 L of total flow).

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 3/6/2002 to 3/7/2002\_2001-08



### Rain Data

Start Date/Time: 03/06/02 19:26  
Stop Date/Time: 03/07/02 12:43  
Event Rain (mm): 8.89  
Max Intensity (mm/hr): 15.24

### Date/Time

### Runoff Data

Start Date/Time: 03/06/02 19:33  
Stop Date/Time: 03/07/02 19:00  
Total Flow Volume (L): 12078  
Peak Flow (L/s): 6.00  
Observed Runoff Coefficient: 0.588

### Sample Data

Start Date/Time: 03/06/02 19:33  
Stop Date/Time: 03/07/02 18:38  
Estimated Percent Capture: 100%  
Successful Aliquots: 35

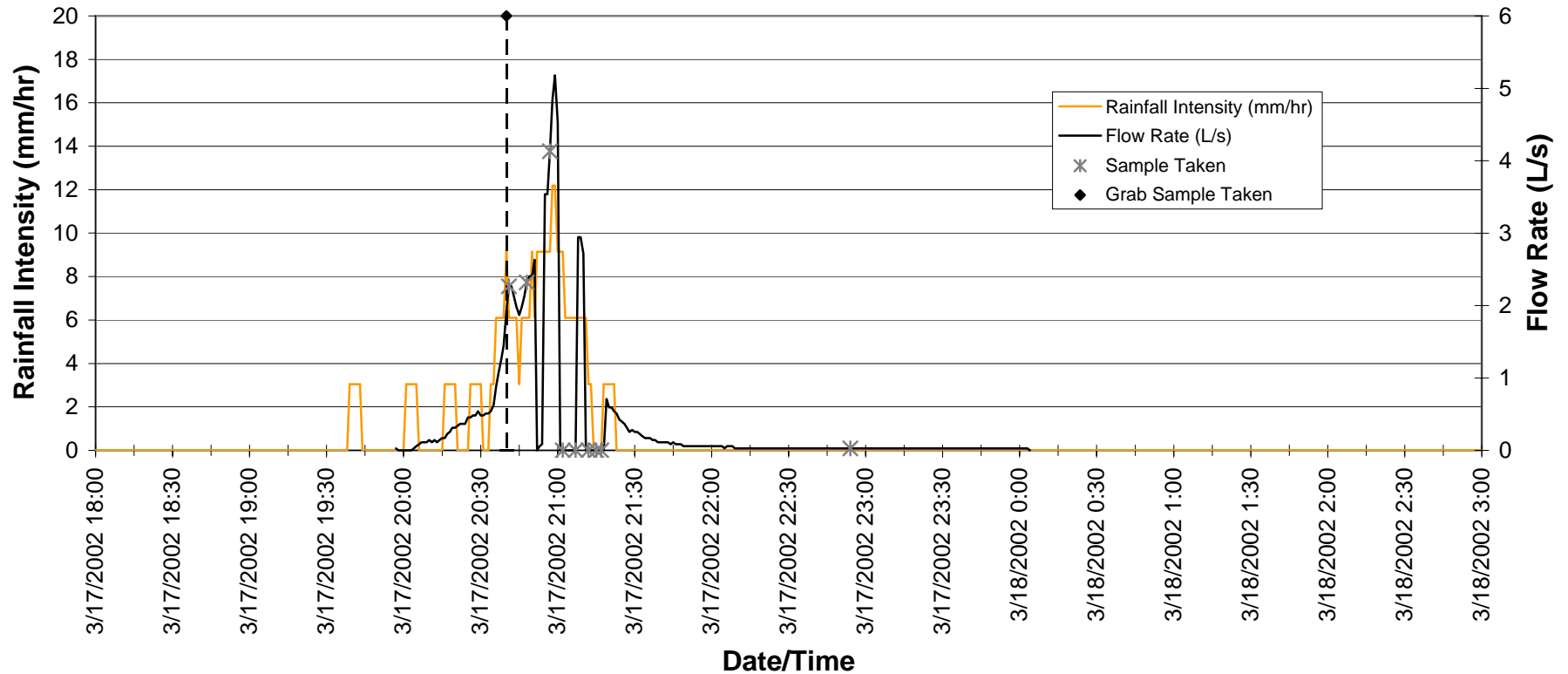
Notes:

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.231

Event: 3/17/2002 to 3/18/2002\_2001-09



### Rain Data

Start Date/Time: 03/17/02 19:39  
 Stop Date/Time: 03/17/02 21:18  
 Event Rain (mm): 5.84  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 03/17/02 19:57  
 Stop Date/Time: 03/18/02 00:04  
 Total Flow Volume (L): 5227  
 Peak Flow (L/s): 5.18  
 Observed Runoff Coefficient: 0.387

### Sample Data

Start Date/Time: 03/17/02 19:57  
 Stop Date/Time: 03/17/02 22:58  
 Estimated Percent Capture: 98%  
 Avg. Successful Aliquots/Bottle: 8  
 Max. Successful Aliquots (Bottle#1): 9

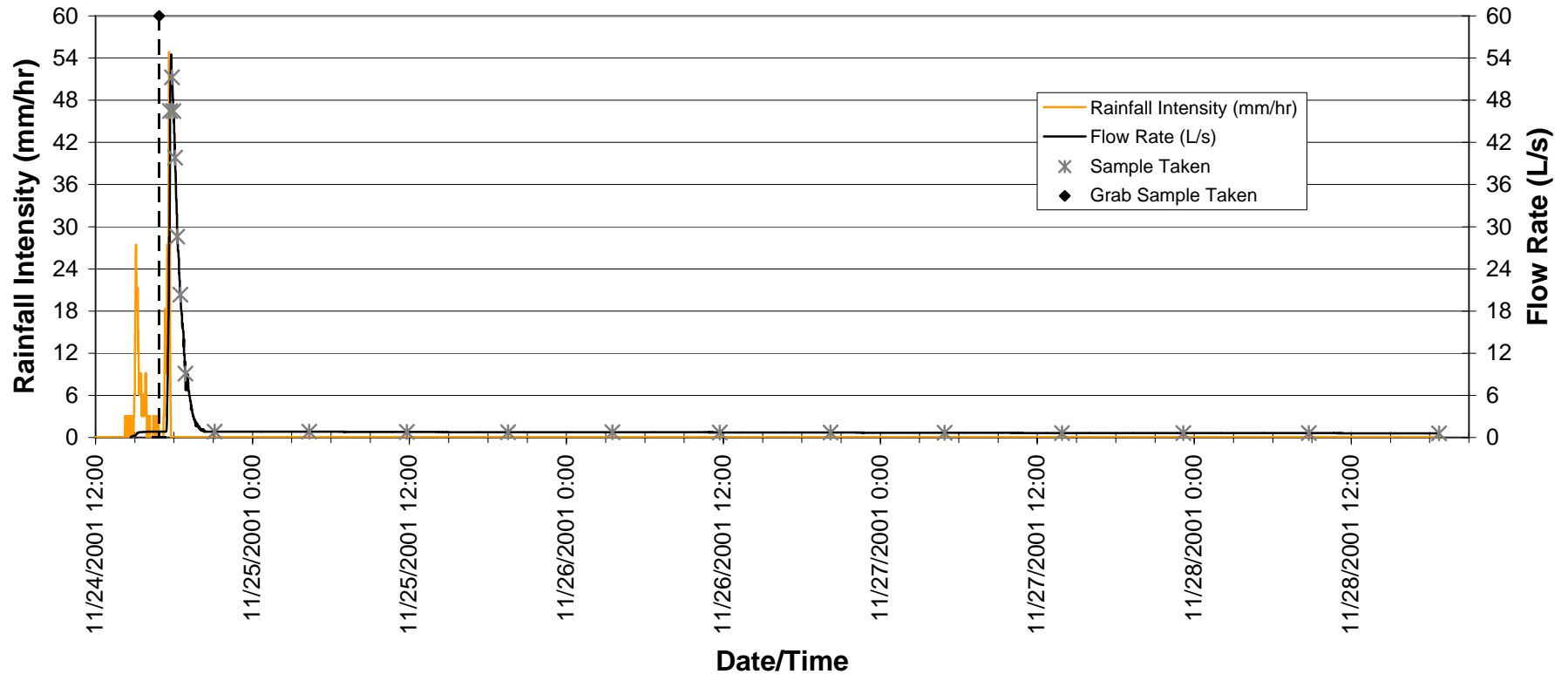
Notes: Flow reading appears inaccurate during two time periods (21:01-21:07 and 21:11-21:18 on 3/17/02). Level and flow measurement were zero during these periods in the middle of the storm. Flow measurements appear accurate during the remaining portion of the storm.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 11/24/01 to 11/28/01\_2001-01



### Rain Data

Start Date/Time: 11/24/01 14:15  
Stop Date/Time: 11/24/01 17:41  
Event Rain (mm): 23.11  
Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 11/24/01 14:41  
Stop Date/Time: 11/28/01 18:44  
Total Flow Volume (L): 410398  
Peak Flow (L/s): 54.53  
Observed Runoff Coefficient: 0.348

### Sample Data

Start Date/Time: 11/24/01 14:41  
Stop Date/Time: 11/28/01 18:44  
Estimated Percent Capture: 100%  
Successful Aliquots: 19

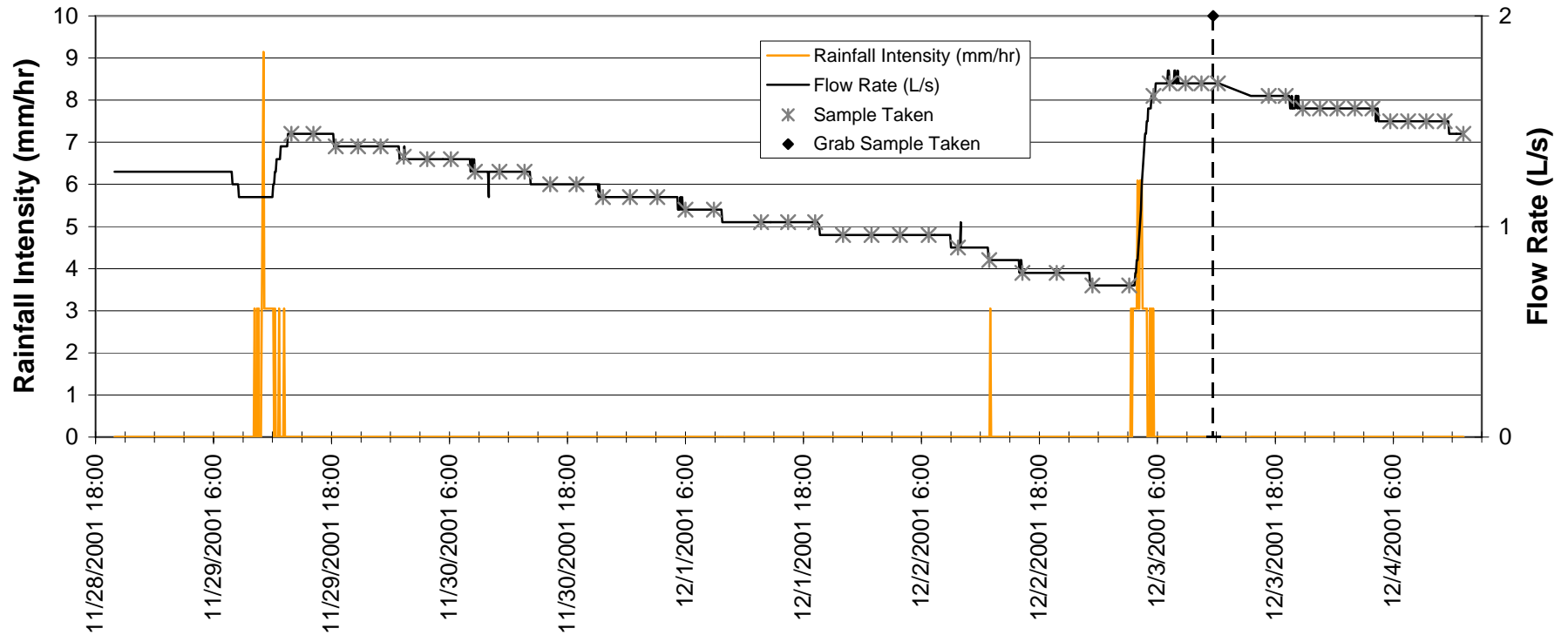
Notes: This hydrograph represents the first discrete sample analyzed following the 11/24/01 storm. Storm water was backed up in the flow equalization basin and slowly draining through CSF.

## Event Summary

Site: 604R (12-217)

Event: 11-28-01 to 12-4-01\_2001-02

Catchment Area (ha): 5.1



### Date/Time

#### Rain Data

Start Date/Time: 11/29/01 10:10  
 Stop Date/Time: 12/03/01 05:35  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 9.14

#### Runoff Data

Start Date/Time: 11/28/01 19:55  
 Stop Date/Time: 12/04/01 13:08  
 Total Flow Volume (L): 603831  
 Peak Flow (L/s): 1.74  
 Observed Runoff Coefficient: 0.914

#### Sample Data

Start Date/Time: 11/29/01 11:05  
 Stop Date/Time: 12/04/01 13:08  
 Estimated Percent Capture: 89%  
 Successful Aliquots: 48

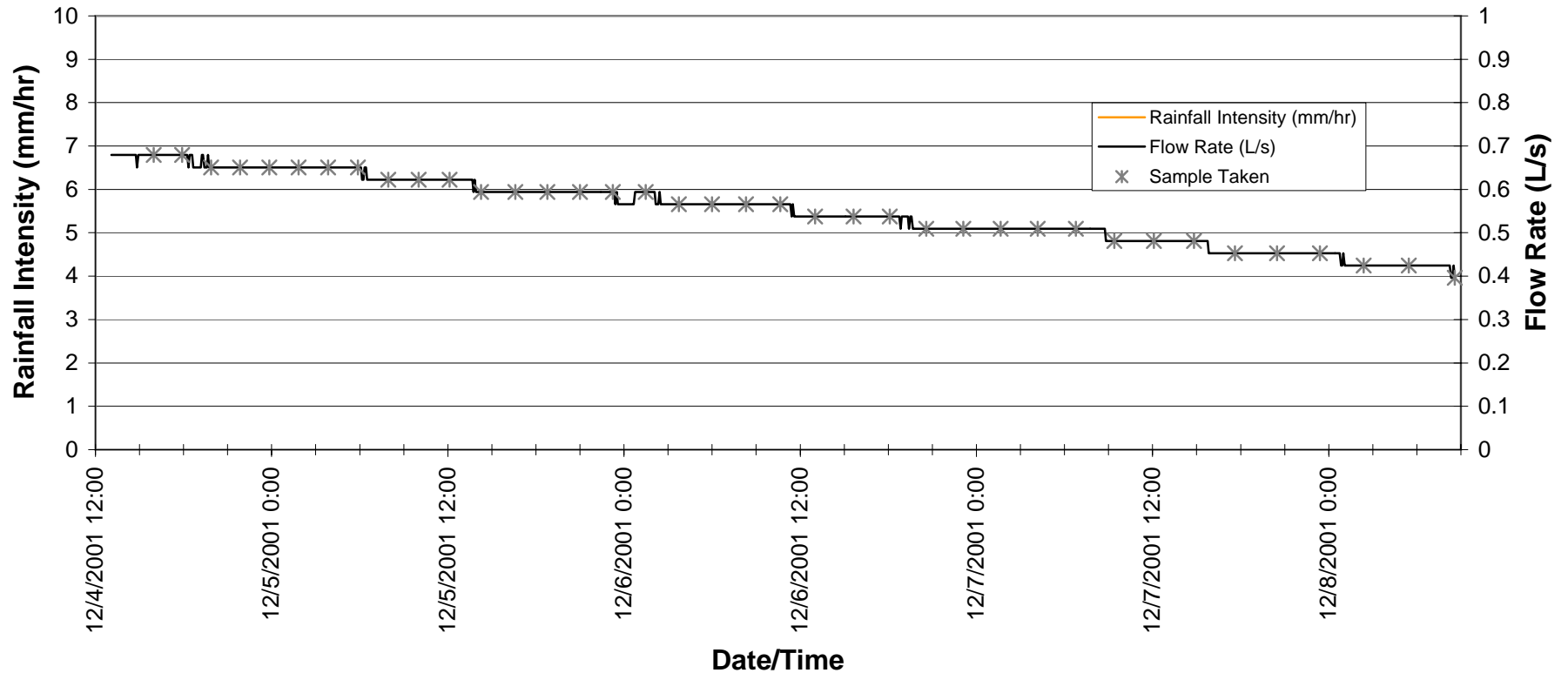
Notes: Sampler was not turned on during the beginning of the storm. Flow was still measured.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 12/4/01 to 12/08/01\_2001-03

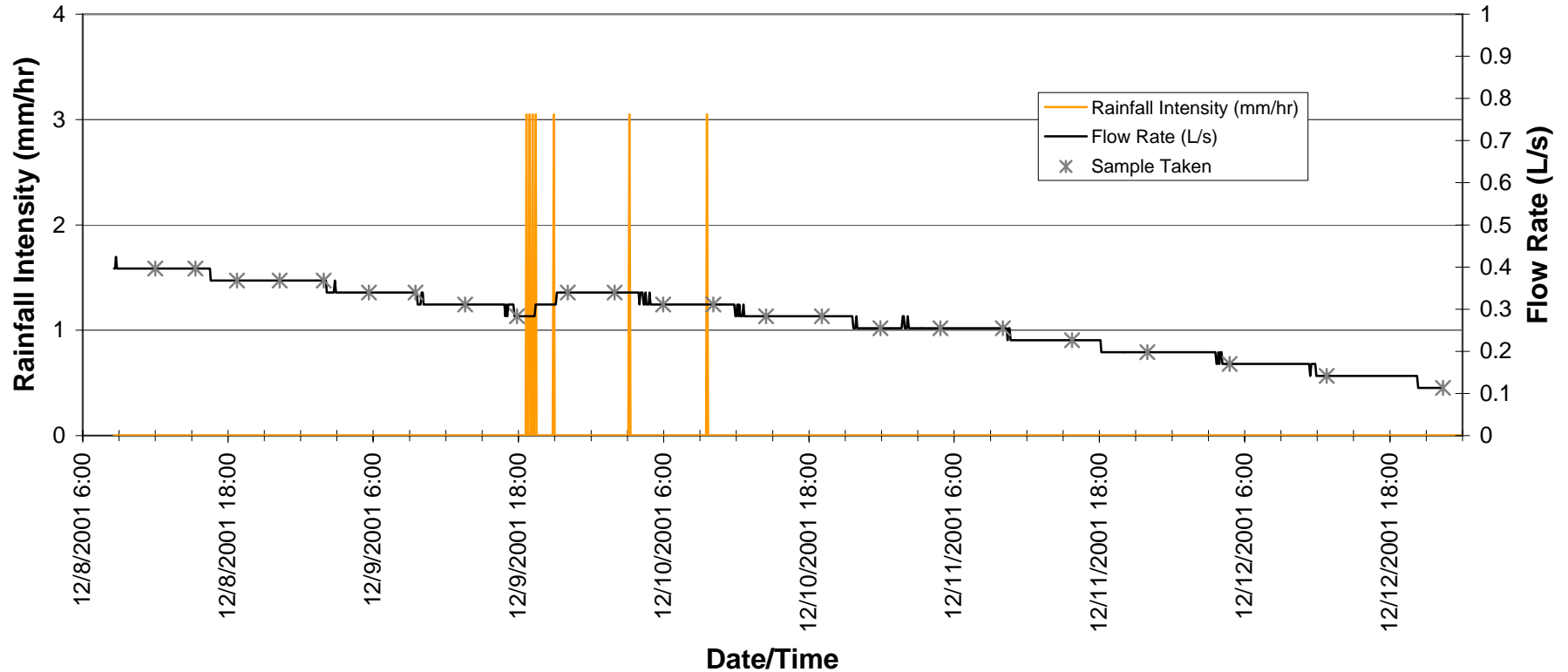


## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 12/8/01 to 12/12/01\_2001-04



### Rain Data

Start Date/Time: 12/09/01 18:35  
Stop Date/Time: 12/10/01 09:35  
Event Rain (mm): 1.78  
Max Intensity (mm/hr): 3.05

### Runoff Data

Start Date/Time: 12/08/01 08:37  
Stop Date/Time: 12/12/01 22:24  
Total Flow Volume (L): 108214  
Peak Flow (L/s): 0.42  
Observed Runoff Coefficient: 1.193

### Sample Data

Start Date/Time: 12/08/01 08:37  
Stop Date/Time: 12/12/01 22:24  
Estimated Percent Capture: 100%  
Successful Aliquots: 23

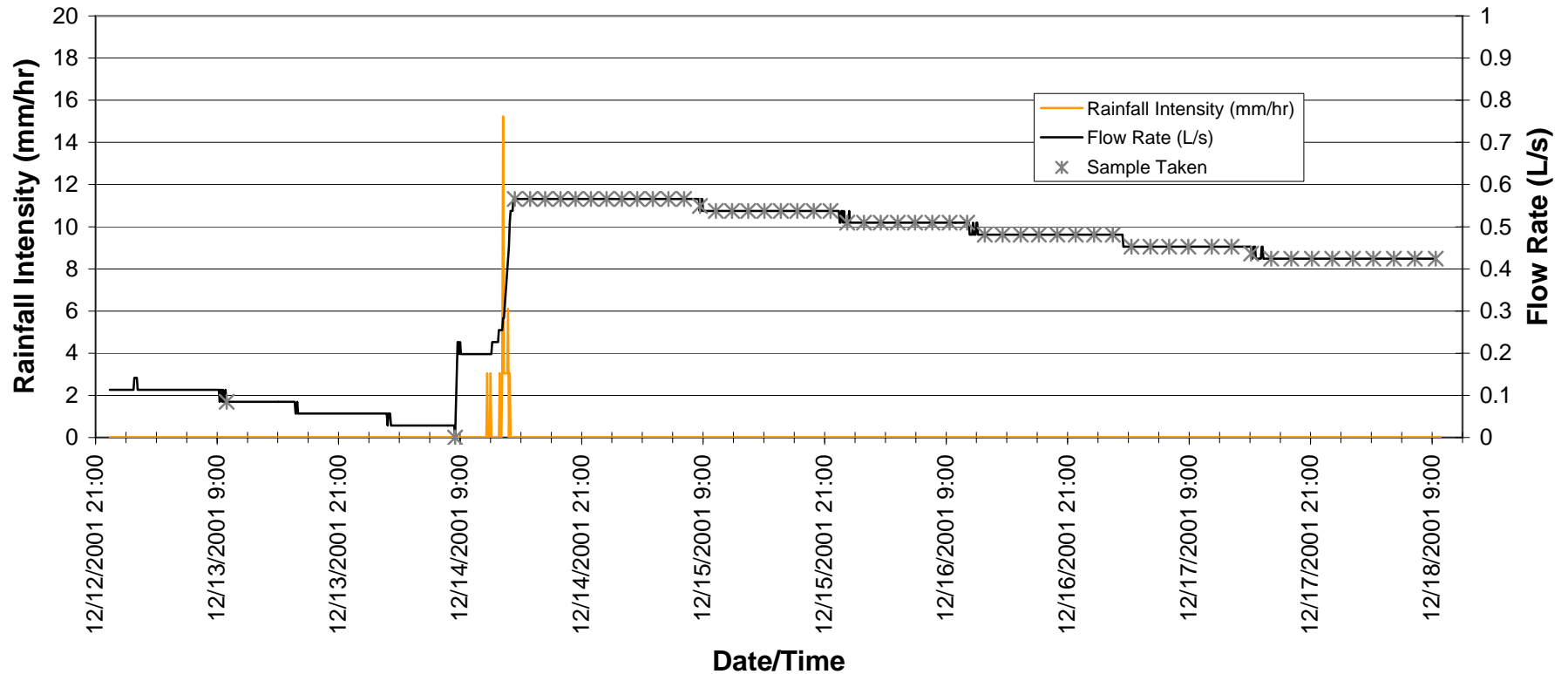
Notes: No Caltrans-defined precipitation event identified. Initial flow was from a previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 12-12-01 to 12-18-01\_2001-05



### Rain Data

Start Date/Time: 12/14/01 11:40  
Stop Date/Time: 12/14/01 13:55  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/12/01 22:25  
Stop Date/Time: 12/18/01 09:22  
Total Flow Volume (L): 177097  
Peak Flow (L/s): 0.57  
Observed Runoff Coefficient: 0.804

### Sample Data

Start Date/Time: 12/12/01 22:25  
Stop Date/Time: 12/18/01 09:22  
Estimated Percent Capture: 100%  
Successful Aliquots: 55

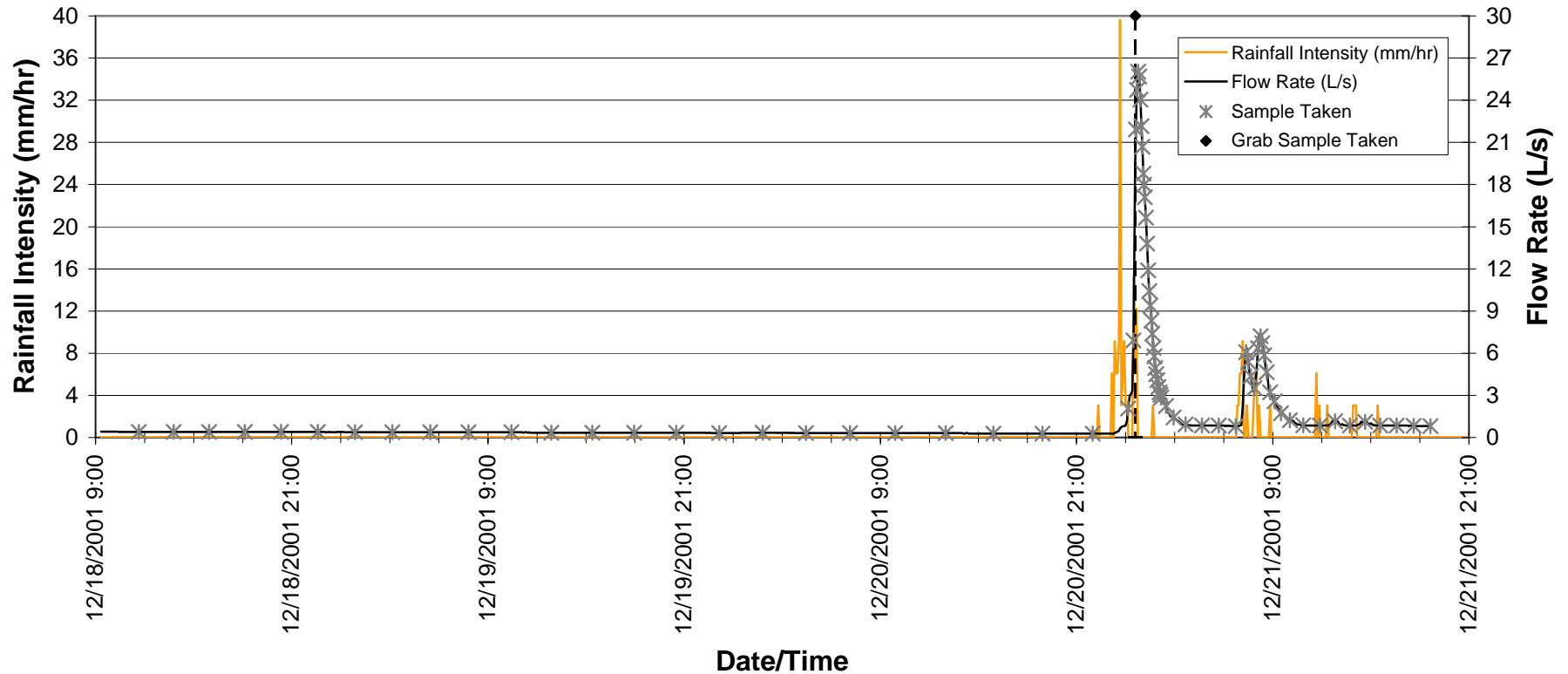
Notes: Initial runoff was from a previous storm event.

## Event Summary

Site: 604R (12-217)

Event: 12-18-01 to 12-22-01\_2001-06

Catchment Area (ha): 5.1



### Rain Data

Start Date/Time: 12/20/01 22:20  
Stop Date/Time: 12/21/01 15:25  
Event Rain (mm): 18.03  
Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 12/18/01 09:23  
Stop Date/Time: 12/21/01 18:40  
Total Flow Volume (L): 250124  
Peak Flow (L/s): 26.12  
Observed Runoff Coefficient: 0.272

### Sample Data

Start Date/Time: 12/18/01 09:23  
Stop Date/Time: 12/21/01 18:40  
Estimated Percent Capture: 100%  
Successful Aliquots: 80

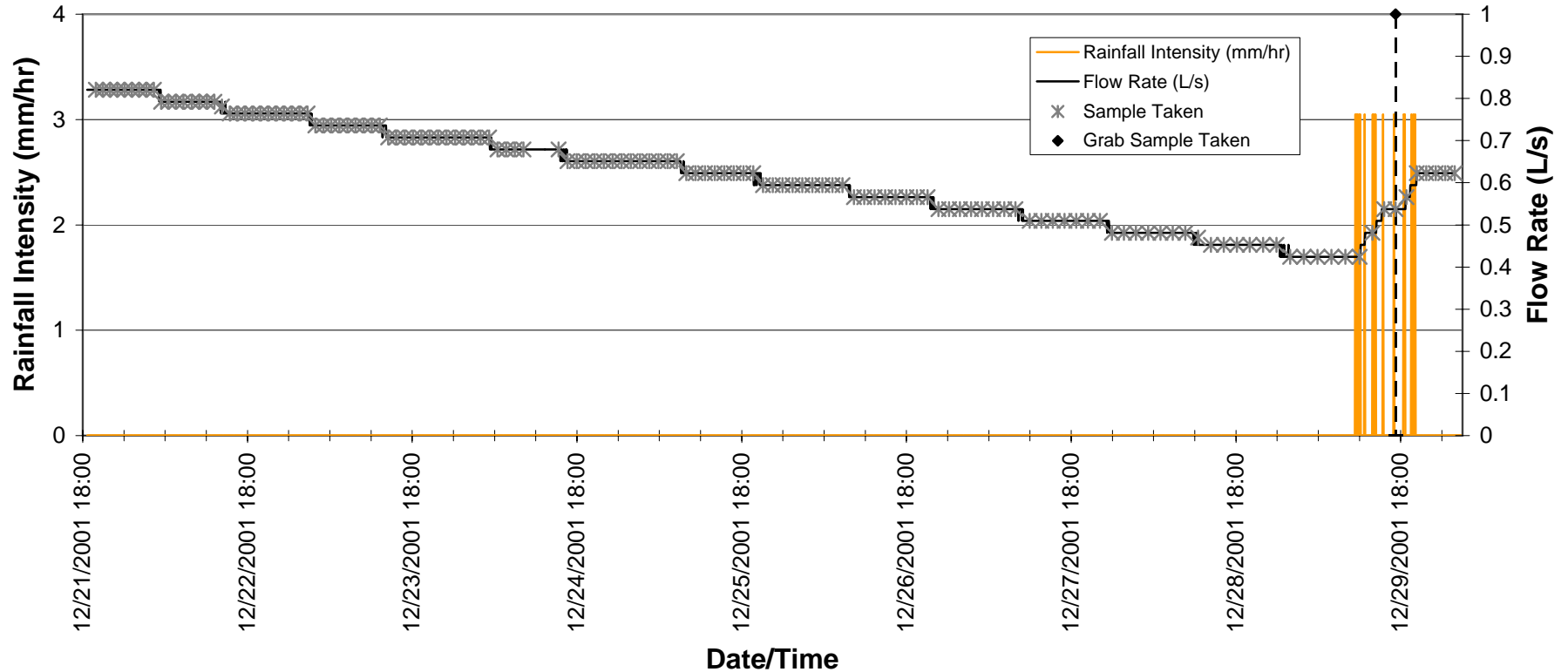
Notes: Initial runoff was from a previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 12-22-01 to 12-30-01\_2001-07



### Rain Data

Start Date/Time: 12/29/01 11:25  
Stop Date/Time: 12/29/01 20:05  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 3.05

### Runoff Data

Start Date/Time: 12/21/01 18:41  
Stop Date/Time: 12/30/01 01:53  
Total Flow Volume (L): 441170  
Peak Flow (L/s): 0.82  
Observed Runoff Coefficient: 2.003

### Sample Data

Start Date/Time: 12/21/01 18:41  
Stop Date/Time: 12/30/01 01:53  
Estimated Percent Capture: 100%  
Successful Aliquots: 138

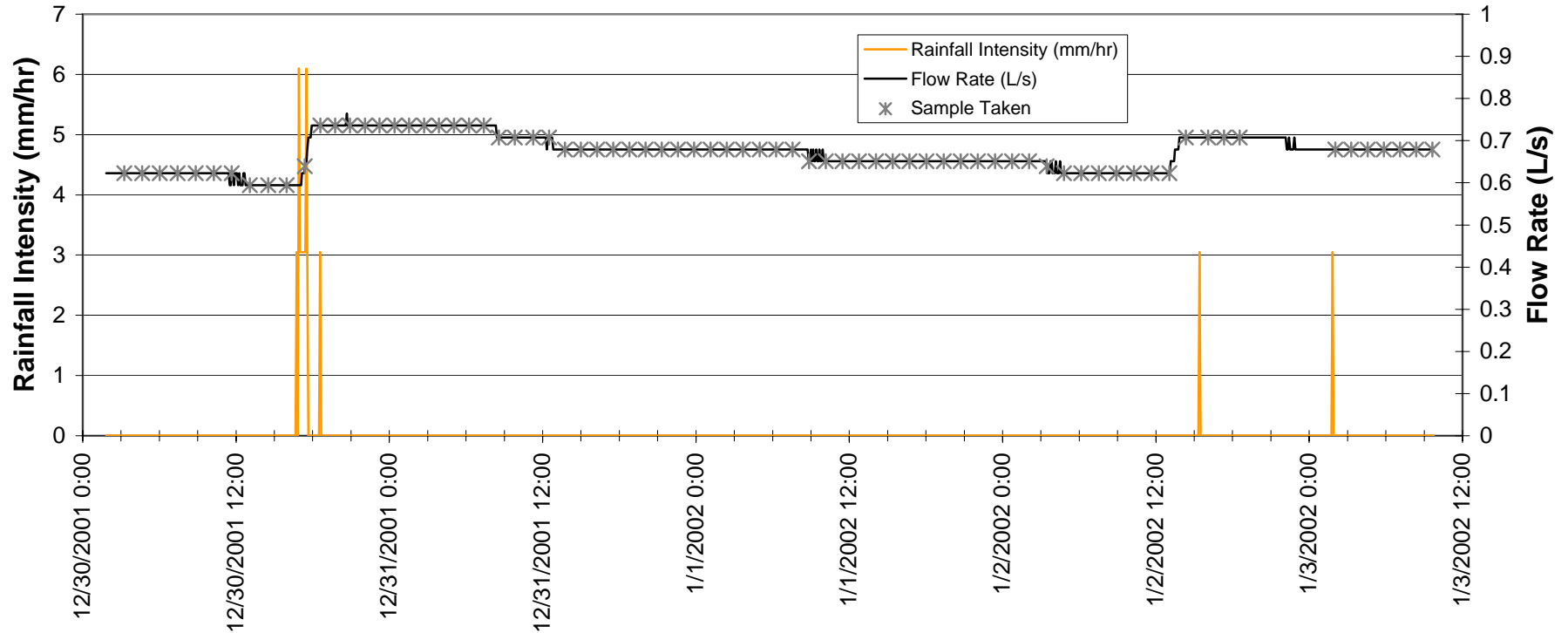
Notes: Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 12-30-01 to 1-3-02\_2001-08



### Date/Time

#### Rain Data

Start Date/Time: 12/30/01 16:45  
Stop Date/Time: 12/30/01 18:35  
Event Rain (mm): 3.30  
Max Intensity (mm/hr): 6.10

#### Runoff Data

Start Date/Time: 12/30/01 01:54  
Stop Date/Time: 01/03/02 09:40  
Total Flow Volume (L): 250667  
Peak Flow (L/s): 0.76  
Observed Runoff Coefficient: 1.489

#### Sample Data

Start Date/Time: 12/30/01 01:54  
Stop Date/Time: 01/03/02 09:40  
Estimated Percent Capture: 94%  
Successful Aliquots: 75

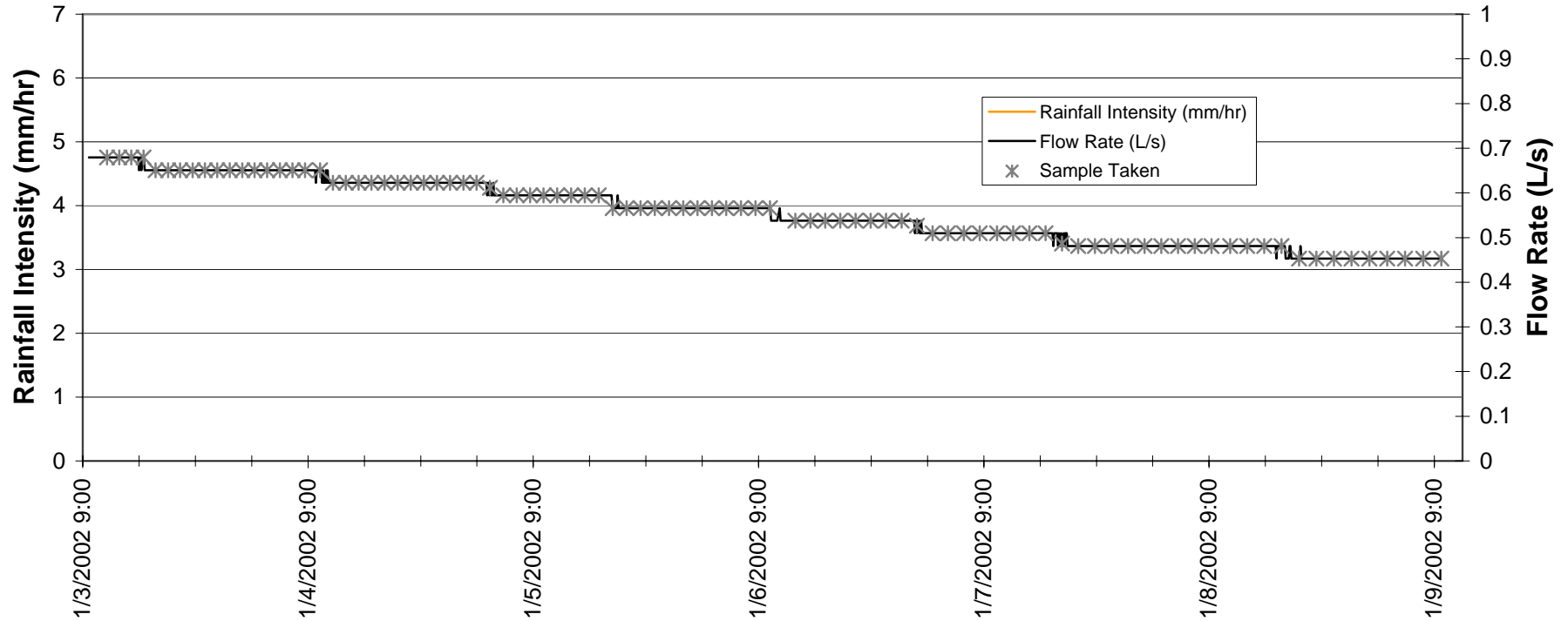
Notes: No Caltrans-defined precipitation event identified. Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 1/3/02 to 1/9/02\_2001-09



### Date/Time

#### Runoff Data

Start Date/Time: 01/03/02 09:41  
Stop Date/Time: 01/09/02 09:45  
Total Flow Volume (L): 288006  
Peak Flow (L/s): 0.68

#### Sample Data

Start Date/Time: 01/03/02 09:41  
Stop Date/Time: 01/09/02 09:45  
Estimated Percent Capture: 100%  
Successful Aliquots: 91

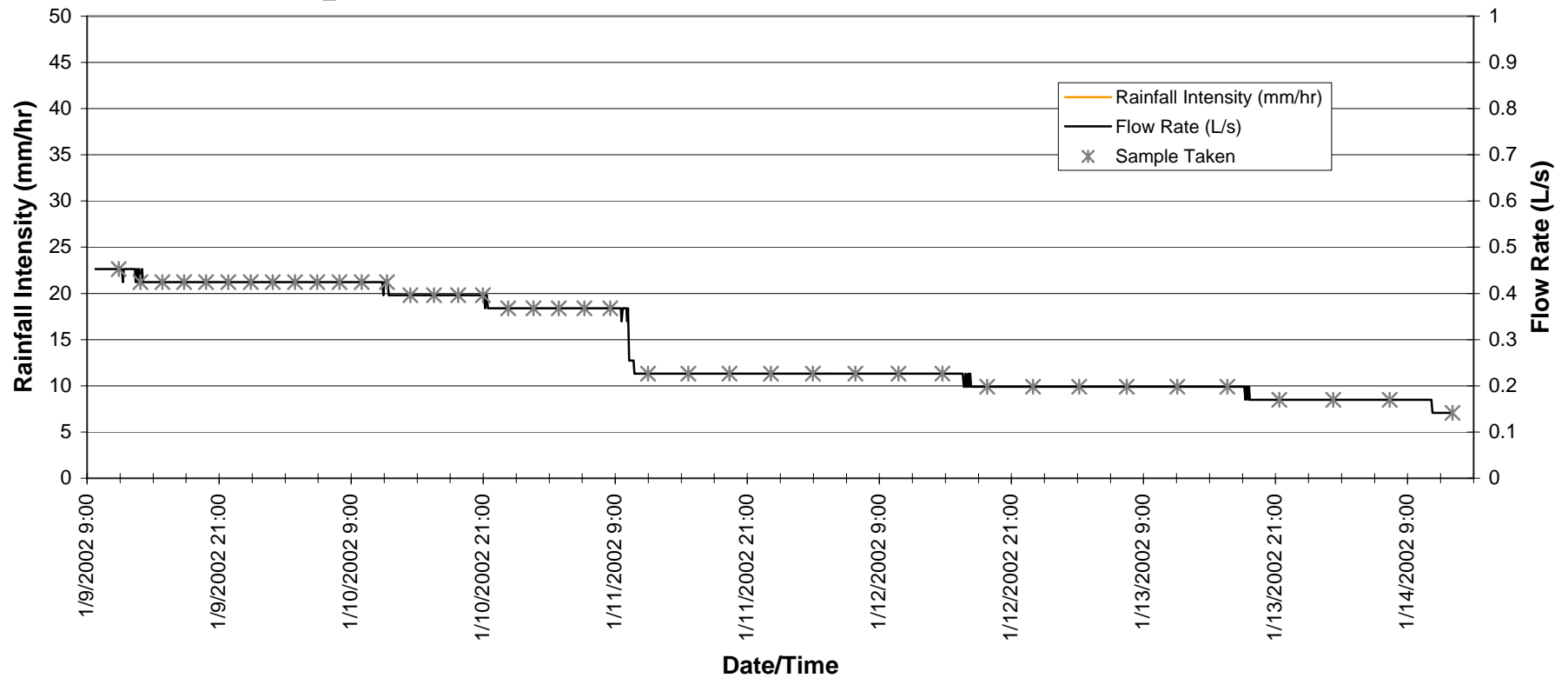
Notes: No rain was recorded between 1-3-02 and 1-9-02. Flow was from a previous storm event.

## Event Summary

Site: 604R (12-217)

Event: 1/9/02 to 1/14/02\_2001-10

Catchment Area (ha): 5.1



### Runoff Data

Start Date/Time: 01/09/02 09:46  
Stop Date/Time: 01/14/02 13:07  
Total Flow Volume (L): 125410  
Peak Flow (L/s): 0.45

### Sample Data

Start Date/Time: 01/09/02 09:46  
Stop Date/Time: 01/14/02 13:07  
Estimated Percent Capture: 100%  
Successful Aliquots: 40

Notes:

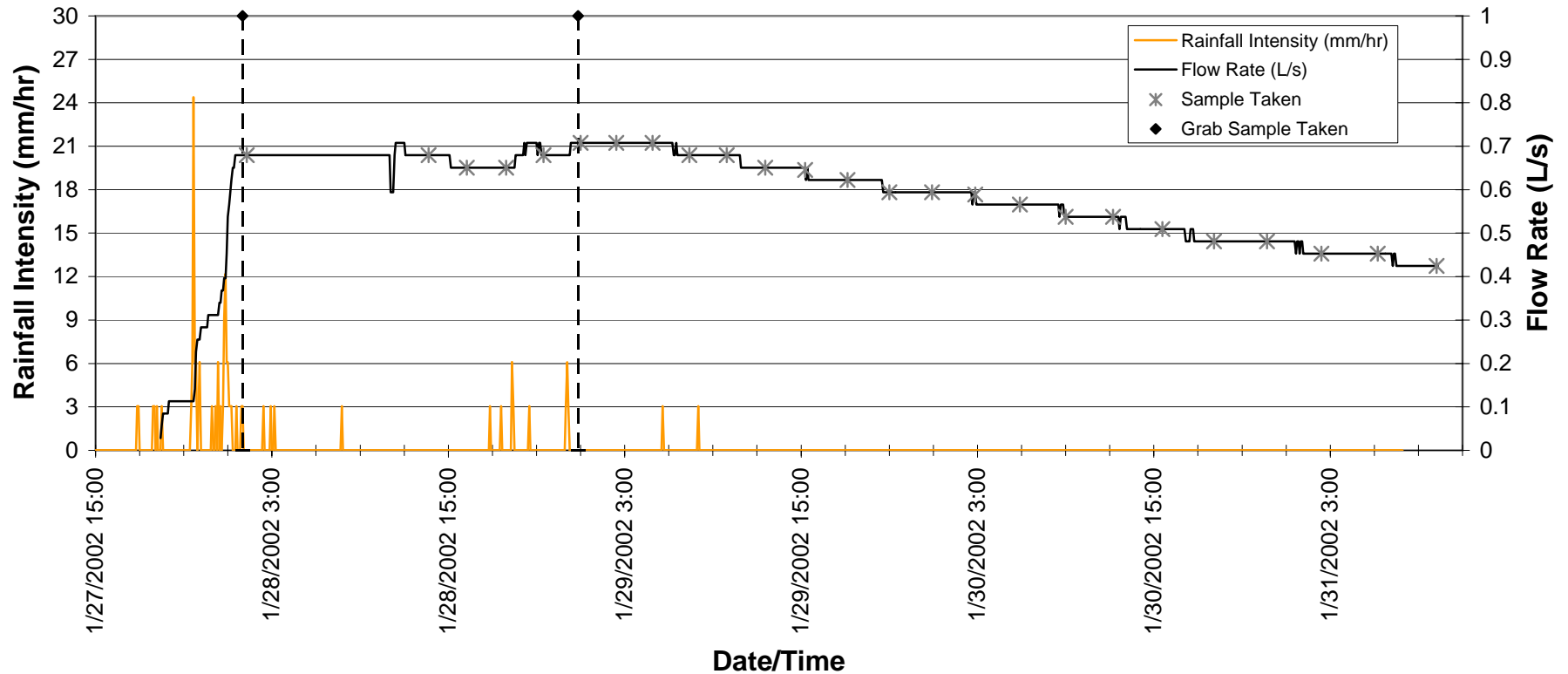
No rain was recorded between 1-9-02 and 1-14-02. Flow was from a previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 1/28/2002 to 1/31/2002\_2001-11



### Rain Data

Start Date/Time: 01/27/02 17:50  
 Stop Date/Time: 01/28/02 07:45  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 24.38

### Date/Time

### Runoff Data

Start Date/Time: 01/27/02 19:25  
 Stop Date/Time: 01/31/02 10:16  
 Total Flow Volume (L): 180964  
 Peak Flow (L/s): 0.71  
 Observed Runoff Coefficient: 0.274

### Sample Data

Start Date/Time: 01/27/02 19:25  
 Stop Date/Time: 01/31/02 10:16  
 Estimated Percent Capture: 87%  
 Successful Aliquots: 25

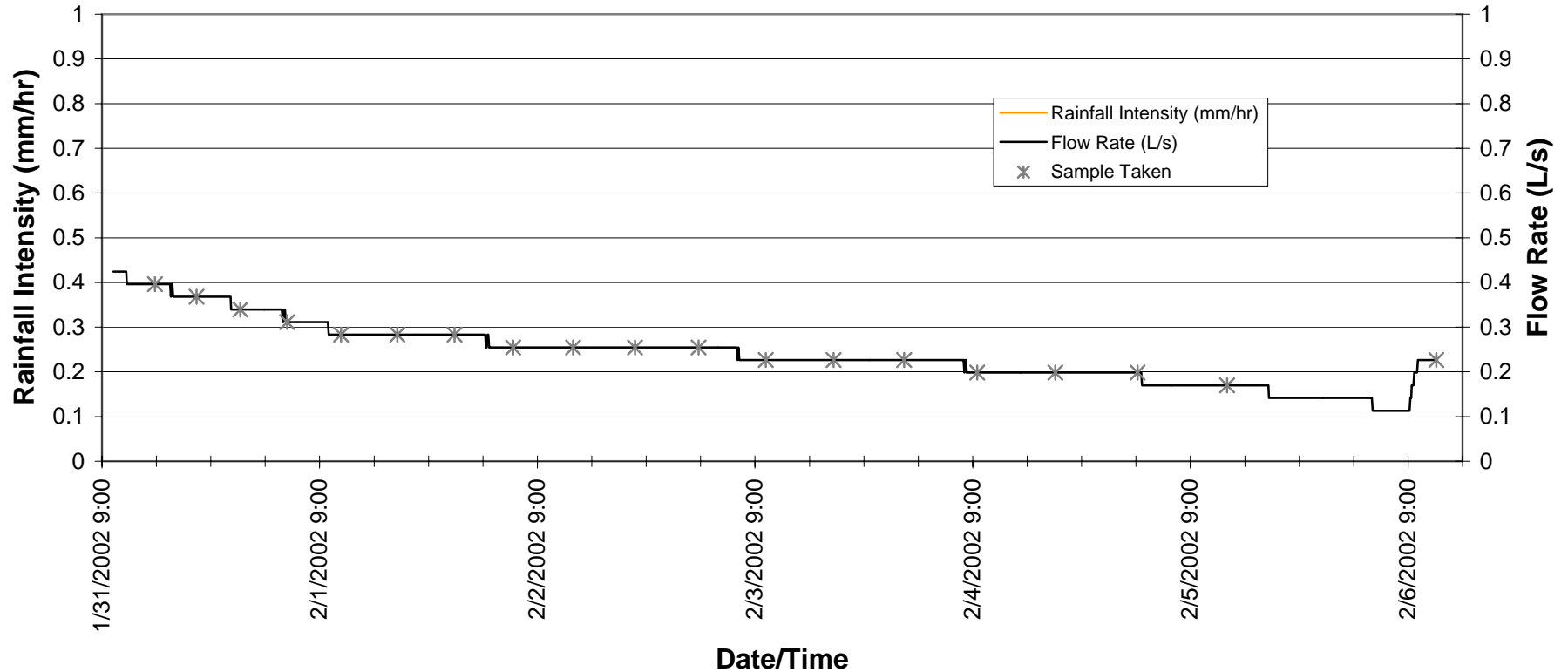
Notes: The flow meter was accidentally shut down at 1:30 am. It is estimated that there was an additional 23,525 L of flow after the flow meter was shut down. This flow has been factored into the percent capture (157,438 L captured out of approximately 180,964 L of total flow).

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 01/31/02 to 02/06/02\_2001-12



### Date/Time

### Runoff Data

Start Date/Time: 01/31/02 10:17  
Stop Date/Time: 02/06/02 12:08  
Total Flow Volume (L): 126437  
Peak Flow (L/s): 0.42

### Sample Data

Start Date/Time: 01/31/02 10:17  
Stop Date/Time: 02/06/02 12:08  
Estimated Percent Capture: 95%  
Successful Aliquots: 19

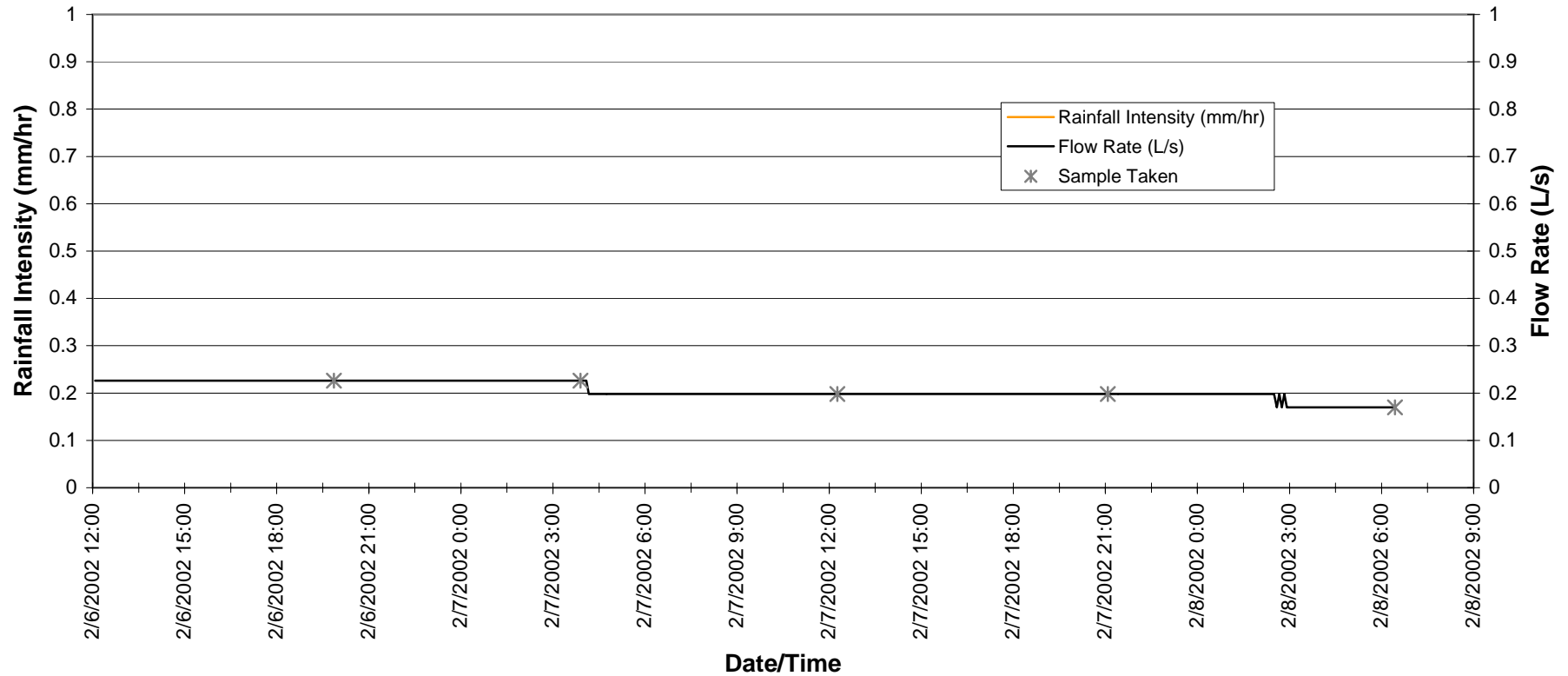
Notes: Flow was from previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 02/06/2002 to 02/08/2002\_2001-13



### Runoff Data

Start Date/Time: 02/06/02 12:08  
Stop Date/Time: 02/08/02 06:28  
Total Flow Volume (L): 31498  
Peak Flow (L/s): 0.23

### Sample Data

Start Date/Time: 02/06/02 12:08  
Stop Date/Time: 02/08/02 06:28  
Estimated Percent Capture: 100%  
Successful Aliquots: 5

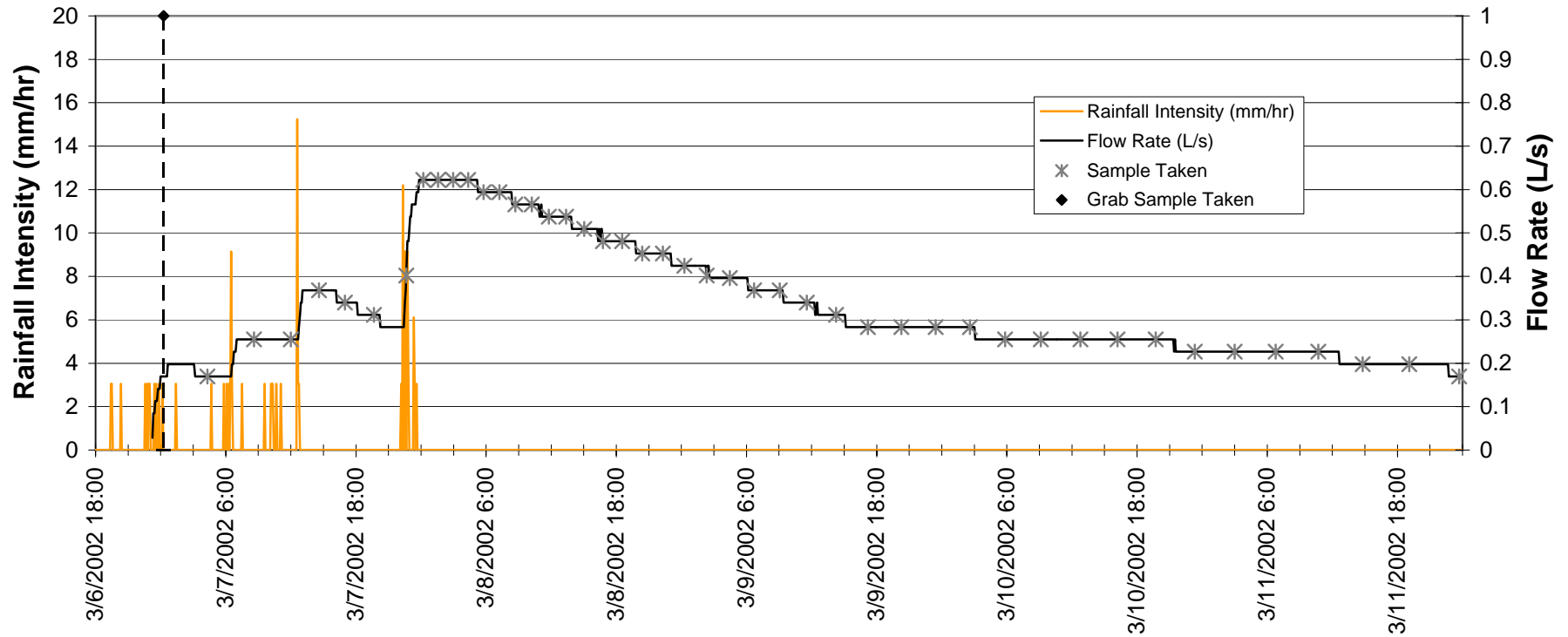
Notes: Flow was from previous storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 3/6/02 to 3/11/02\_2001-14



### Rain Data

Start Date/Time: 03/06/02 19:25  
Stop Date/Time: 03/07/02 23:35  
Event Rain (mm): 12.95  
Max Intensity (mm/hr): 15.24

### Date/Time

### Runoff Data

Start Date/Time: 03/06/02 23:15  
Stop Date/Time: 03/11/02 23:43  
Total Flow Volume (L): 140556  
Peak Flow (L/s): 0.62  
Observed Runoff Coefficient: 0.213

### Sample Data

Start Date/Time: 03/06/02 23:15  
Stop Date/Time: 03/11/02 23:43  
Estimated Percent Capture: 100%  
Successful Aliquots: 45

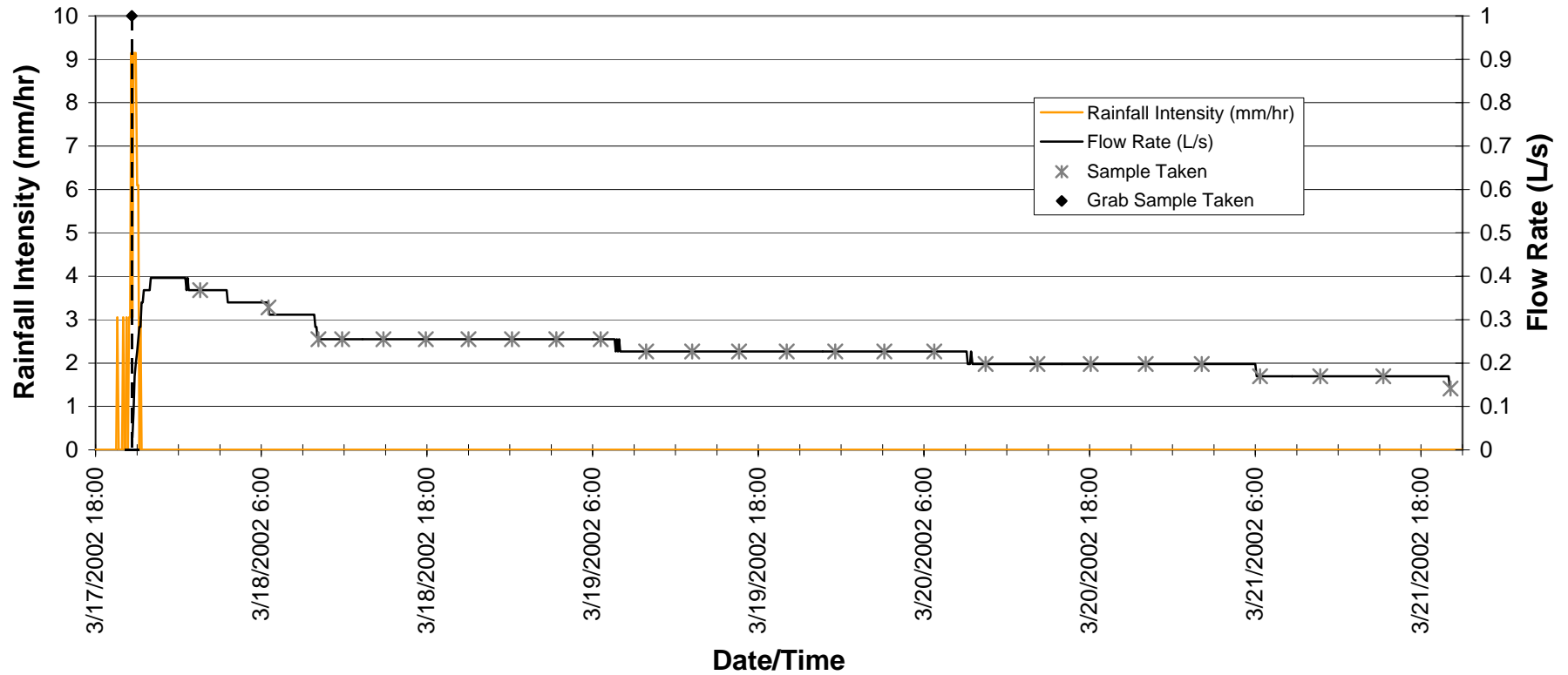
Notes:

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 5.1

Event: 3/17/2002 to 3/21/2002\_2001-15



### Rain Data

Start Date/Time: 03/17/02 19:35  
Stop Date/Time: 03/17/02 21:15  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 03/17/02 20:40  
Stop Date/Time: 03/21/02 20:10  
Total Flow Volume (L): 80697  
Peak Flow (L/s): 0.40  
Observed Runoff Coefficient: 0.271

### Sample Data

Start Date/Time: 03/17/02 20:40  
Stop Date/Time: 03/21/02 20:10  
Estimated Percent Capture: 100%  
Successful Aliquots: 26

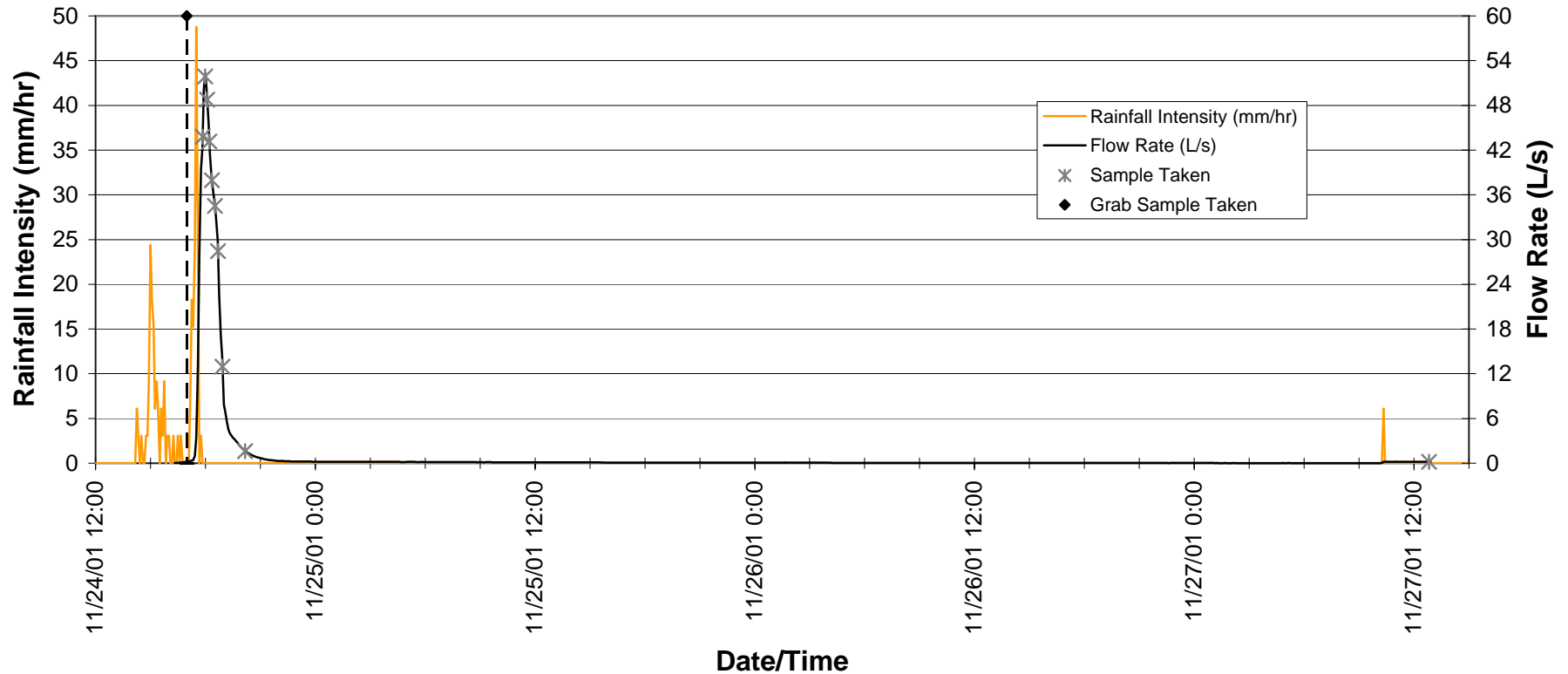
Notes:

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 11-24-01 to 11-28-01\_2001-01



### Rain Data

Start Date/Time: 11/24/01 14:15  
Stop Date/Time: 11/24/01 17:45  
Event Rain (mm): 23.37  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 11/24/01 16:20  
Stop Date/Time: 11/27/01 12:52  
Total Flow Volume (L): 216058  
Peak Flow (L/s): 52.33  
Observed Runoff Coefficient: 0.181

### Sample Data

Start Date/Time: 11/24/01 16:20  
Stop Date/Time: 11/27/01 12:52  
Estimated Percent Capture: 100%  
Successful Aliquots: 10

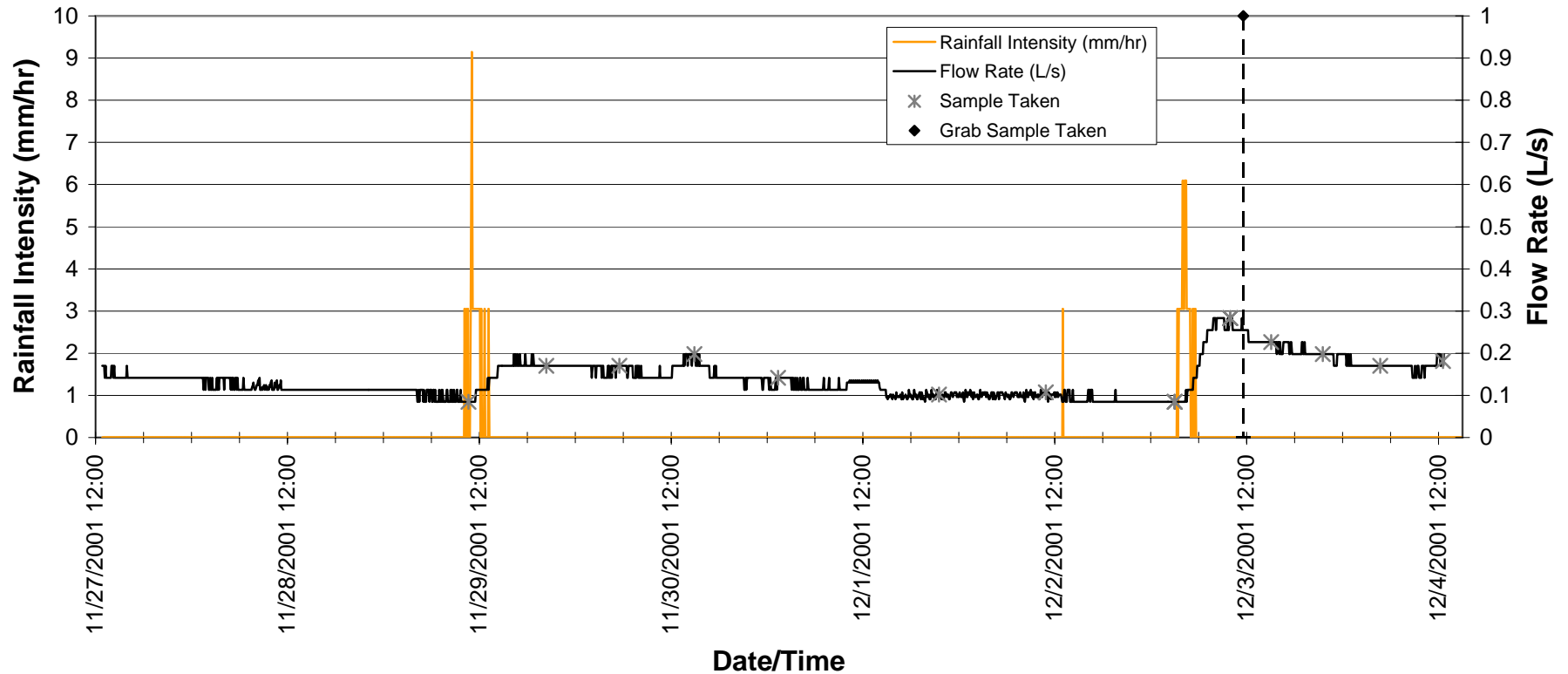
Notes: This hydrograph represents the first discrete sample analyzed following the 11/24/01 storm. Storm water was backed up in the flow equalization basin and slowly draining through CSF.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 11-28-01 to 12-4-01\_2001-02



### Rain Data

Start Date/Time: 11/29/01 10:10  
 Stop Date/Time: 12/03/01 05:35  
 Event Rain (mm): 12.95  
 Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/27/01 12:52  
 Stop Date/Time: 12/04/01 12:36  
 Total Flow Volume (L): 83524  
 Peak Flow (L/s): 0.28  
 Observed Runoff Coefficient: 0.126

### Sample Data

Start Date/Time: 11/27/01 12:52  
 Stop Date/Time: 12/04/01 12:36  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 15

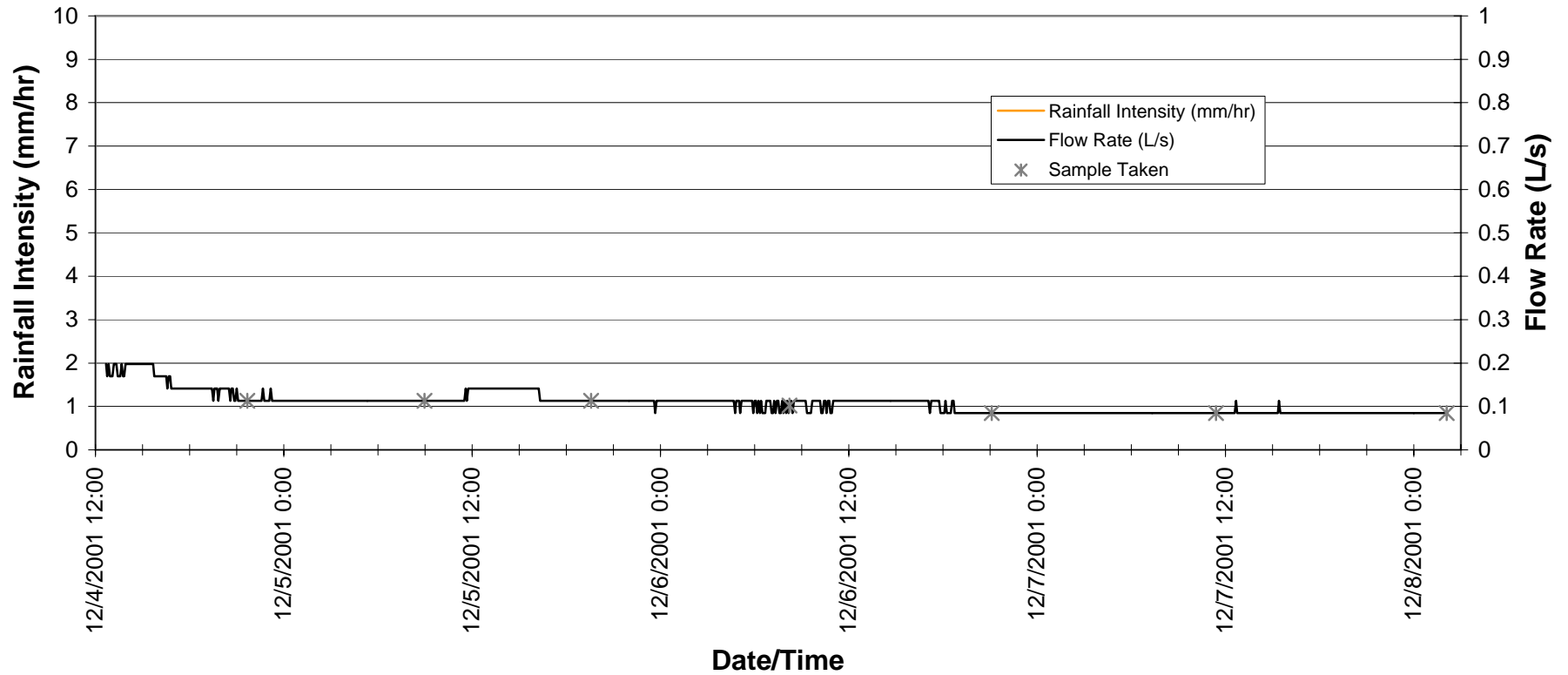
Notes: Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 12-4-01 to 12-8-01\_2001-03



### Date/Time

### Runoff Data

Start Date/Time: 12/04/01 12:40  
Stop Date/Time: 12/08/01 02:09  
Total Flow Volume (L): 33298  
Peak Flow (L/s): 0.20

### Sample Data

Start Date/Time: 12/04/01 12:40  
Stop Date/Time: 12/08/01 02:09  
Estimated Percent Capture: 100%  
Successful Aliquots: 7

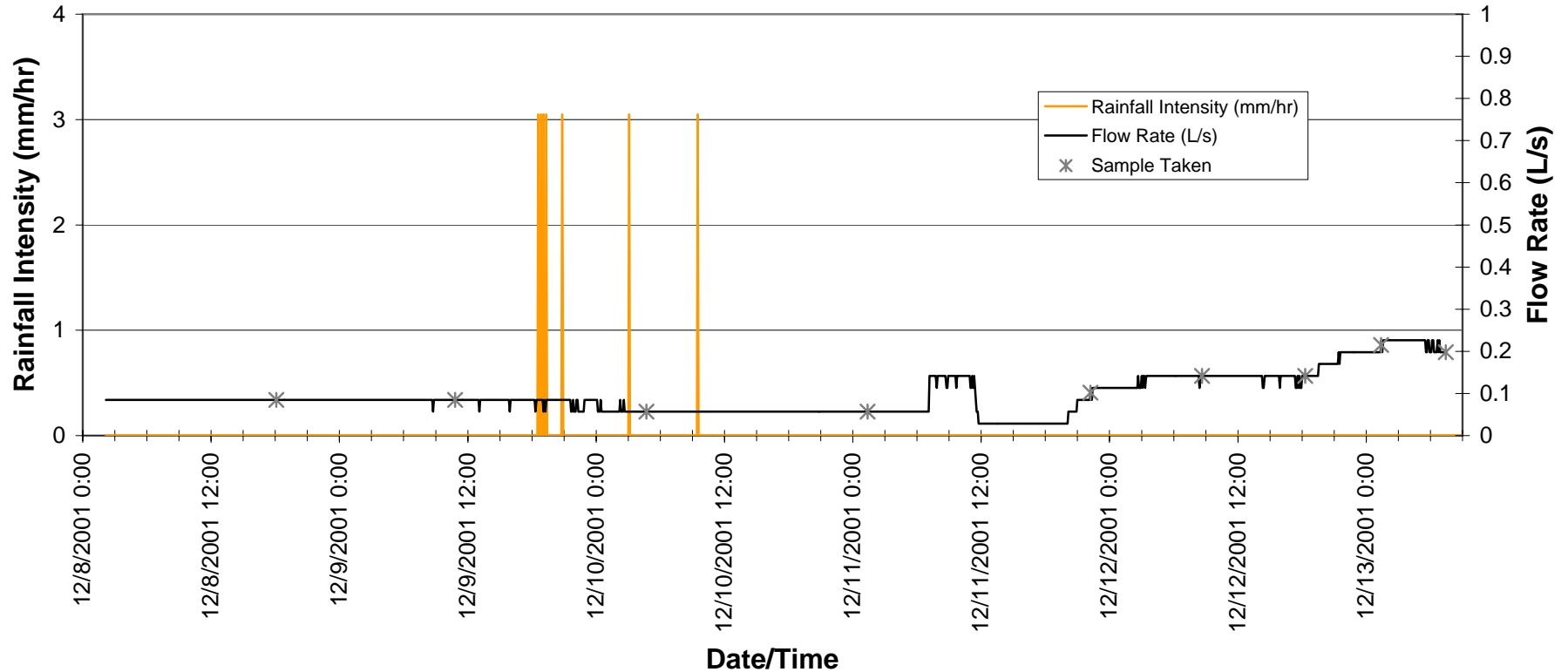
Notes: No rain recorded during this sampling period. Basin draining from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 12/8/01 to 12/13/01\_2001-04



### Rain Data

Start Date/Time: 12/09/01 18:35  
Stop Date/Time: 12/10/01 09:35  
Event Rain (mm): 1.78  
Max Intensity (mm/hr): 3.05

### Runoff Data

Start Date/Time: 12/08/01 02:10  
Stop Date/Time: 12/13/01 07:29  
Total Flow Volume (L): 42934  
Peak Flow (L/s): 0.23  
Observed Runoff Coefficient: 0.255

### Sample Data

Start Date/Time: 12/08/01 02:10  
Stop Date/Time: 12/13/01 07:29  
Estimated Percent Capture: 100%  
Successful Aliquots: 9

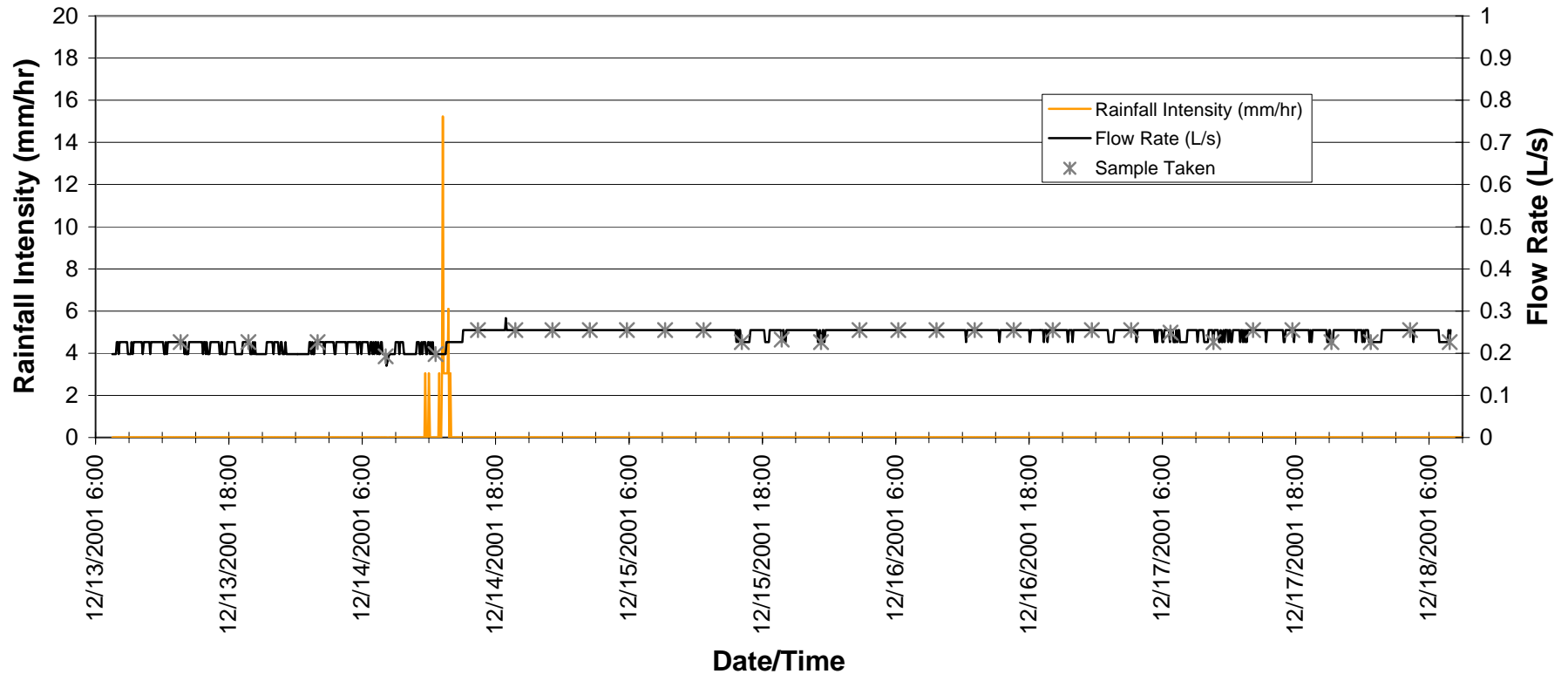
Notes: Flow was temporarily altered to repair wier plate on 12/11/01 between 11:15 and 15:15. Initial flow was from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 12-13-01 to 12-18-01\_2001-05



### Rain Data

Start Date/Time: 12/14/01 11:40  
Stop Date/Time: 12/14/01 13:55  
Event Rain (mm): 4.32  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/13/01 07:30  
Stop Date/Time: 12/18/01 07:53  
Total Flow Volume (L): 104919  
Peak Flow (L/s): 0.28  
Observed Runoff Coefficient: 0.476

### Sample Data

Start Date/Time: 12/13/01 07:30  
Stop Date/Time: 12/18/01 07:53  
Estimated Percent Capture: 100%  
Successful Aliquots: 31

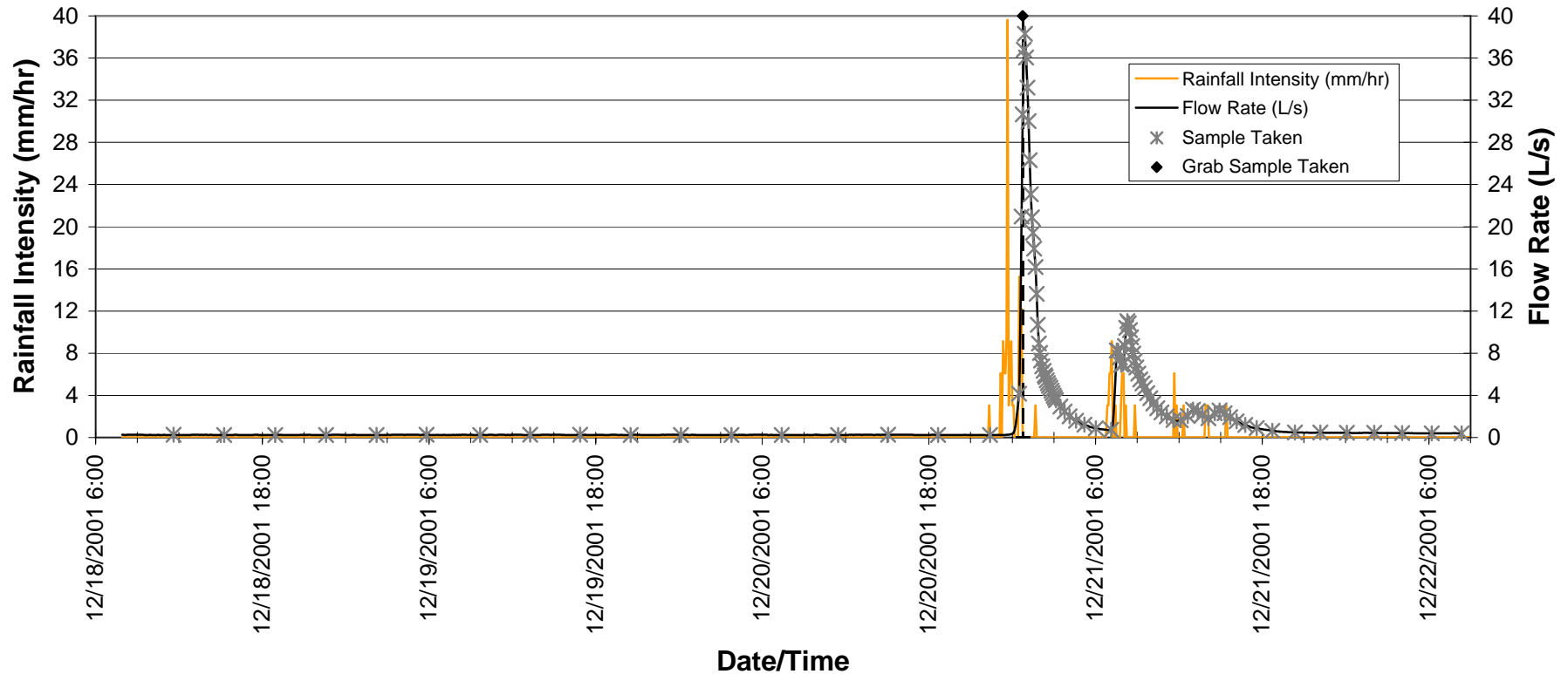
Notes: Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 12-18-01 to 12-22-01\_2001-06



### Rain Data

Start Date/Time: 12/20/01 22:20  
Stop Date/Time: 12/21/01 15:25  
Event Rain (mm): 18.03  
Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 12/18/01 07:55  
Stop Date/Time: 12/22/01 08:24  
Total Flow Volume (L): 367986  
Peak Flow (L/s): 38.32  
Observed Runoff Coefficient: 0.400

### Sample Data

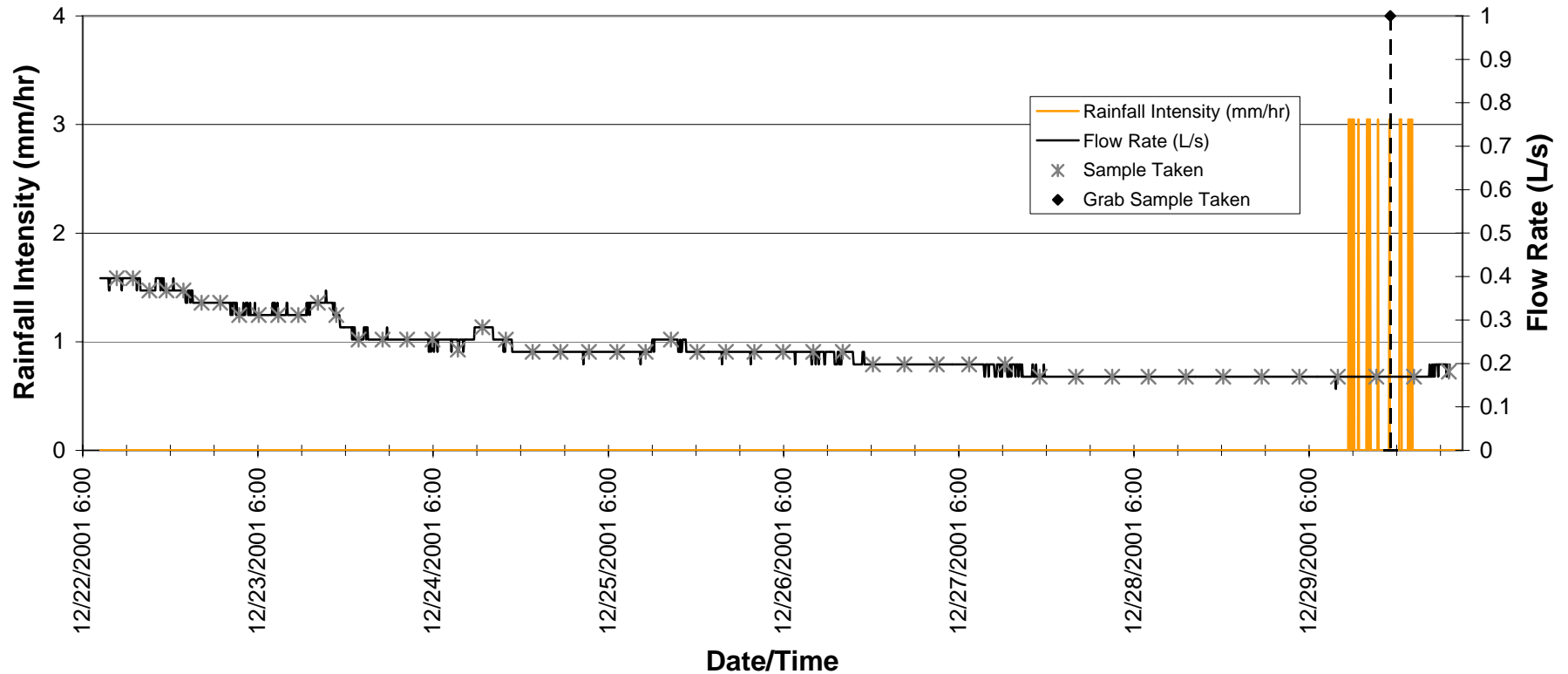
Start Date/Time: 12/18/01 07:55  
Stop Date/Time: 12/22/01 08:24  
Estimated Percent Capture: 96%  
Successful Aliquots: 103

Notes: Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-218)  
Event: 12/22/01 to 12/30/01\_2001-07

Catchment Area (ha): 5.1

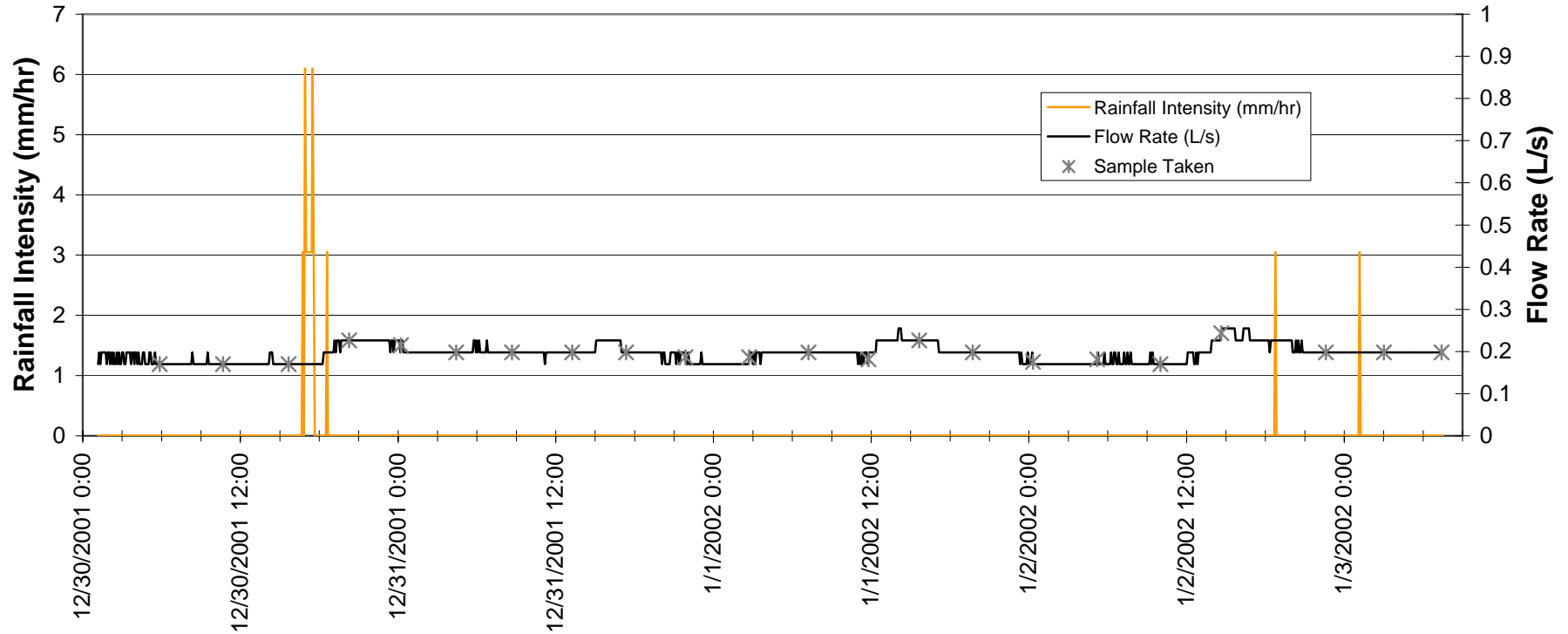


## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 12-30-01 to 1-3-02\_2001-08



### Date/Time

#### Rain Data

Start Date/Time: 12/30/01 16:45  
Stop Date/Time: 12/30/01 18:35  
Event Rain (mm): 3.30  
Max Intensity (mm/hr): 6.10

#### Runoff Data

Start Date/Time: 12/30/01 01:12  
Stop Date/Time: 01/03/02 07:26  
Total Flow Volume (L): 71736  
Peak Flow (L/s): 0.25  
Observed Runoff Coefficient: 0.426

#### Sample Data

Start Date/Time: 12/30/01 01:12  
Stop Date/Time: 01/03/02 07:26  
Estimated Percent Capture: 96%  
Successful Aliquots: 22

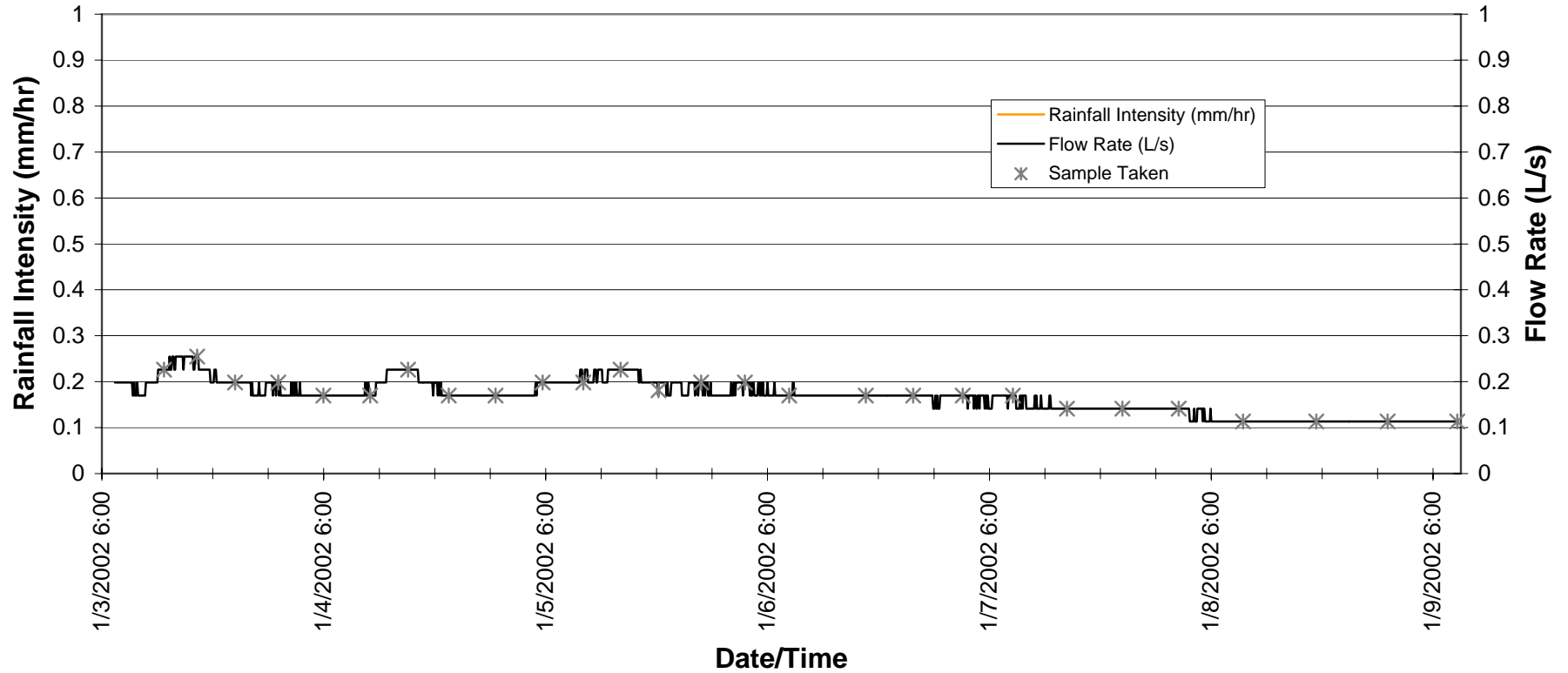
Notes: Initial runoff from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 1/3/02 to 1/9/02\_2001-09



Date/Time

Runoff Data

Start Date/Time: 01/03/02 07:25  
Stop Date/Time: 01/09/02 08:39  
Total Flow Volume (L): 86959  
Peak Flow (L/s): 0.25

Sample Data

Start Date/Time: 01/03/02 07:25  
Stop Date/Time: 01/09/02 08:39  
Estimated Percent Capture: 100%  
Successful Aliquots: 27

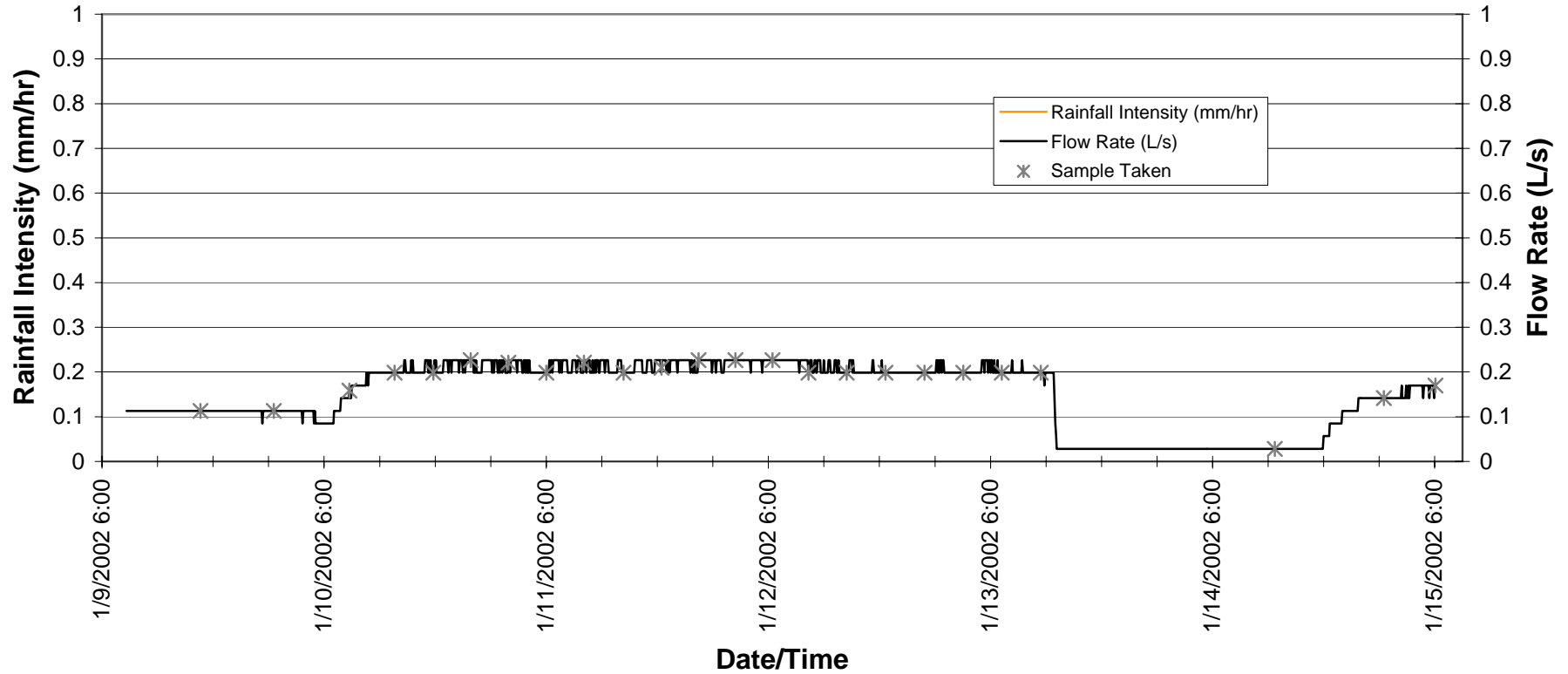
Notes: No rain was recorded between 1/3/02 and 1/9/02. Flow was from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 1/9/02 to 1/15/02\_2001-10



### Date/Time

### Runoff Data

Start Date/Time: 01/09/02 08:40  
Stop Date/Time: 01/15/02 06:07  
Total Flow Volume (L): 75952  
Peak Flow (L/s): 0.23

### Sample Data

Start Date/Time: 01/09/02 08:40  
Stop Date/Time: 01/15/02 06:07  
Estimated Percent Capture: 100%  
Successful Aliquots: 24

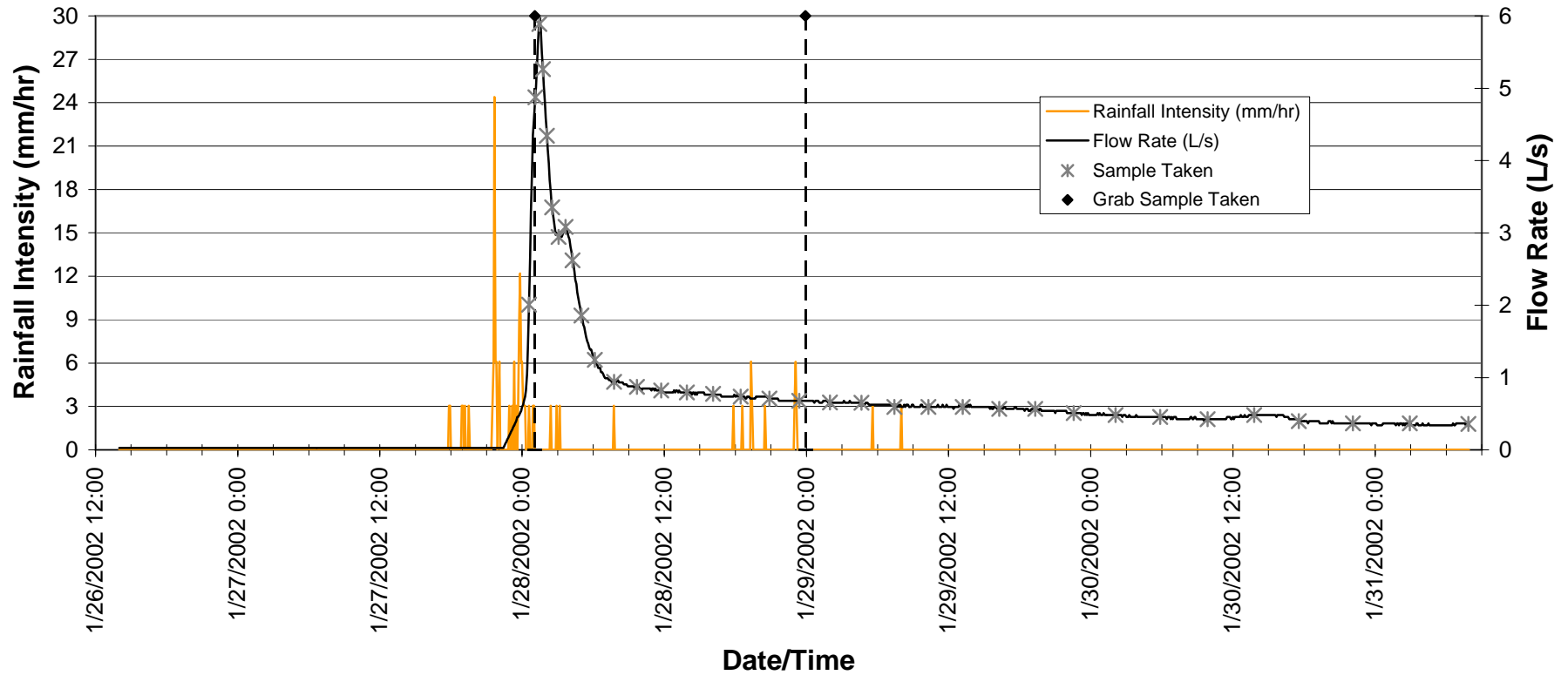
Notes: No rain was recorded between 1/9/02 and 1/15/02. Flow was from a previous storm event. Wier plug was pulled out on 1/13/02 at 12:55 causing the low flow recordings.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 1-28-02 to 1-31-02\_2001-11



### Rain Data

Start Date/Time: 01/27/02 17:50  
Stop Date/Time: 01/28/02 07:45  
Event Rain (mm): 12.95  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 01/26/02 14:00  
Stop Date/Time: 01/31/02 07:54  
Total Flow Volume (L): 219810  
Peak Flow (L/s): 5.97  
Observed Runoff Coefficient: 0.333

### Sample Data

Start Date/Time: 01/26/02 14:00  
Stop Date/Time: 01/31/02 07:54  
Estimated Percent Capture: 100%  
Successful Aliquots: 35

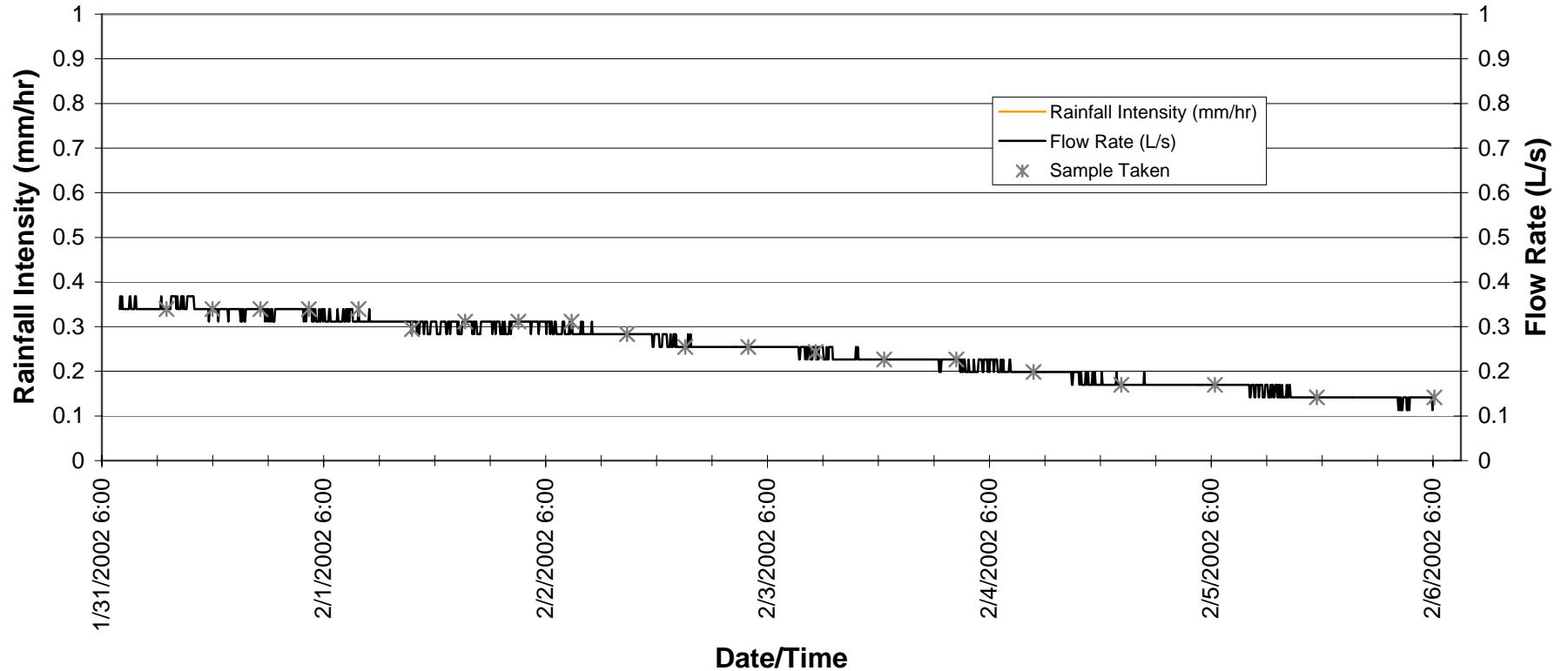
Notes:

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 01/31/02 to 02/06/02\_2001-12



### Date/Time

### Runoff Data

Start Date/Time: 01/31/02 07:55  
Stop Date/Time: 02/06/02 06:12  
Total Flow Volume (L): 125902  
Peak Flow (L/s): 0.37

### Sample Data

Start Date/Time: 01/31/02 07:55  
Stop Date/Time: 02/06/02 06:12  
Estimated Percent Capture: 100%  
Successful Aliquots: 20

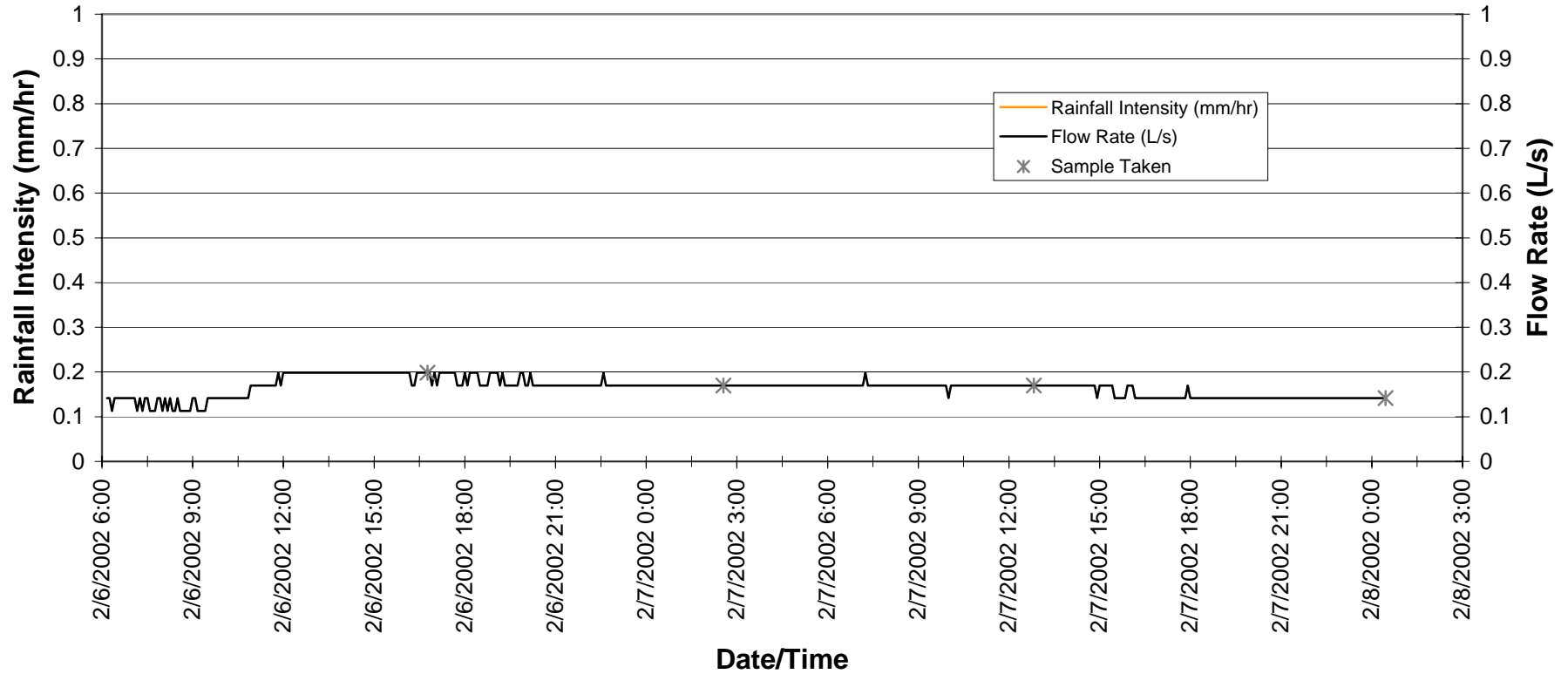
Notes: No rain was recorded between 1/31/02 and 2/06/02. Flow was from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 02-06-2002 to 02-08-2002\_2001-13



### Date/Time

### Runoff Data

Start Date/Time: 02/06/02 06:13  
Stop Date/Time: 02/08/02 00:30  
Total Flow Volume (L): 25020  
Peak Flow (L/s): 0.20

### Sample Data

Start Date/Time: 02/06/02 06:13  
Stop Date/Time: 02/08/02 00:30  
Estimated Percent Capture: 100%  
Successful Aliquots: 4

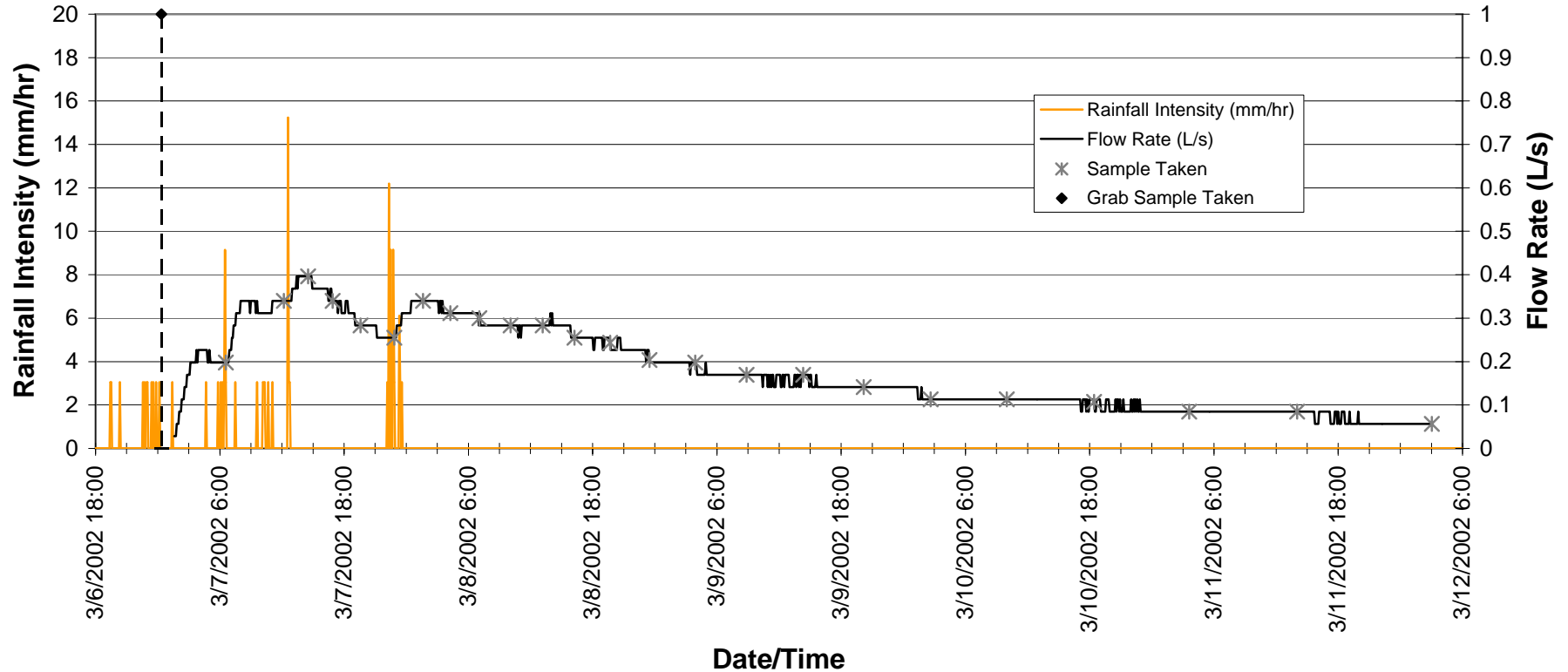
Notes: No rain was recorded between 2/06/02 and 2/08/02. Flow was from a previous storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 3/7/02 to 3/12/02\_2001-14



### Rain Data

Start Date/Time: 03/06/02 19:25  
Stop Date/Time: 03/07/02 23:35  
Event Rain (mm): 12.95  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 03/07/02 01:35  
Stop Date/Time: 03/12/02 03:05  
Total Flow Volume (L): 78087  
Peak Flow (L/s): 0.40  
Observed Runoff Coefficient: 0.118

### Sample Data

Start Date/Time: 03/07/02 01:35  
Stop Date/Time: 03/12/02 03:05  
Estimated Percent Capture: 100%  
Successful Aliquots: 24

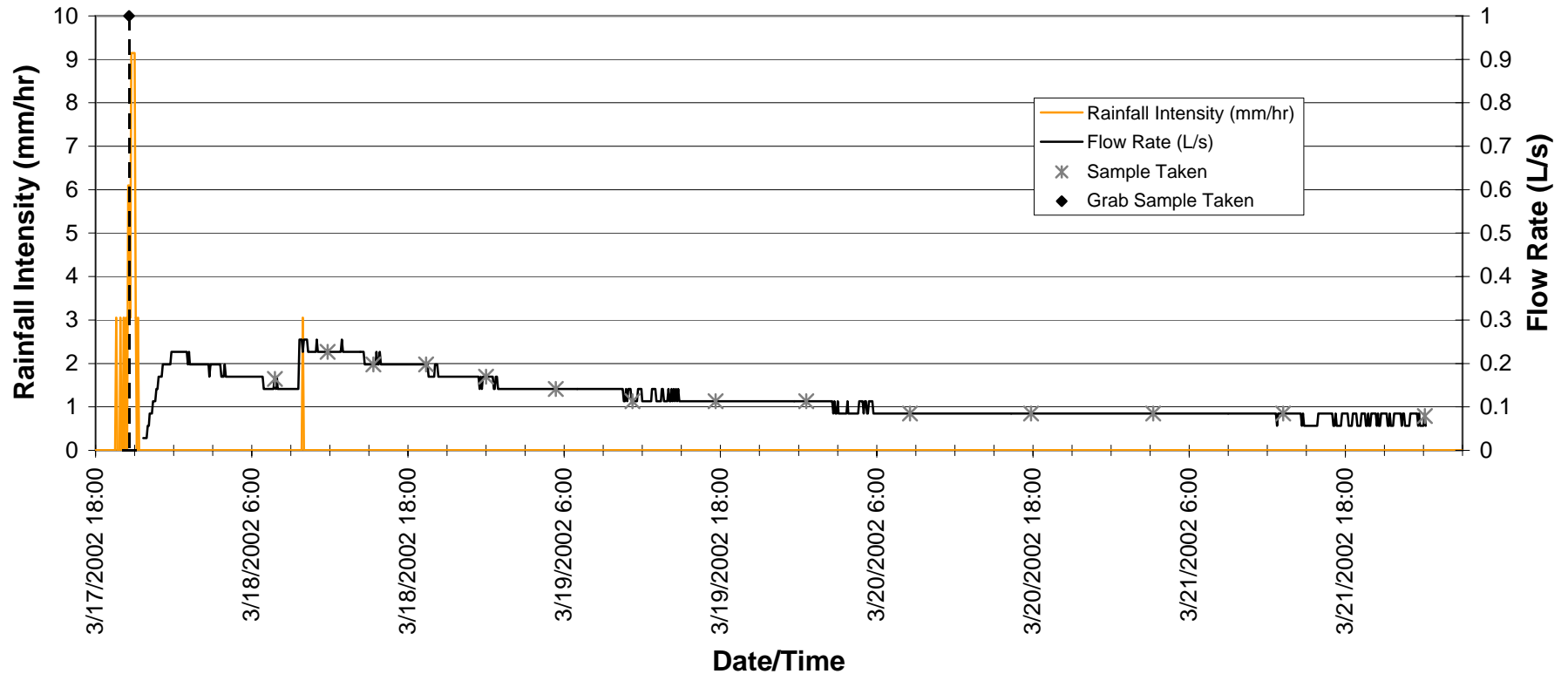
Notes:

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 5.1

Event: 3/17/2002 to 3/22/2002\_2001-15



### Rain Data

Start Date/Time: 03/17/02 19:35  
Stop Date/Time: 03/17/02 21:15  
Event Rain (mm): 5.84  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 03/17/02 21:40  
Stop Date/Time: 03/22/02 00:08  
Total Flow Volume (L): 43422  
Peak Flow (L/s): 0.25  
Observed Runoff Coefficient: 0.146

### Sample Data

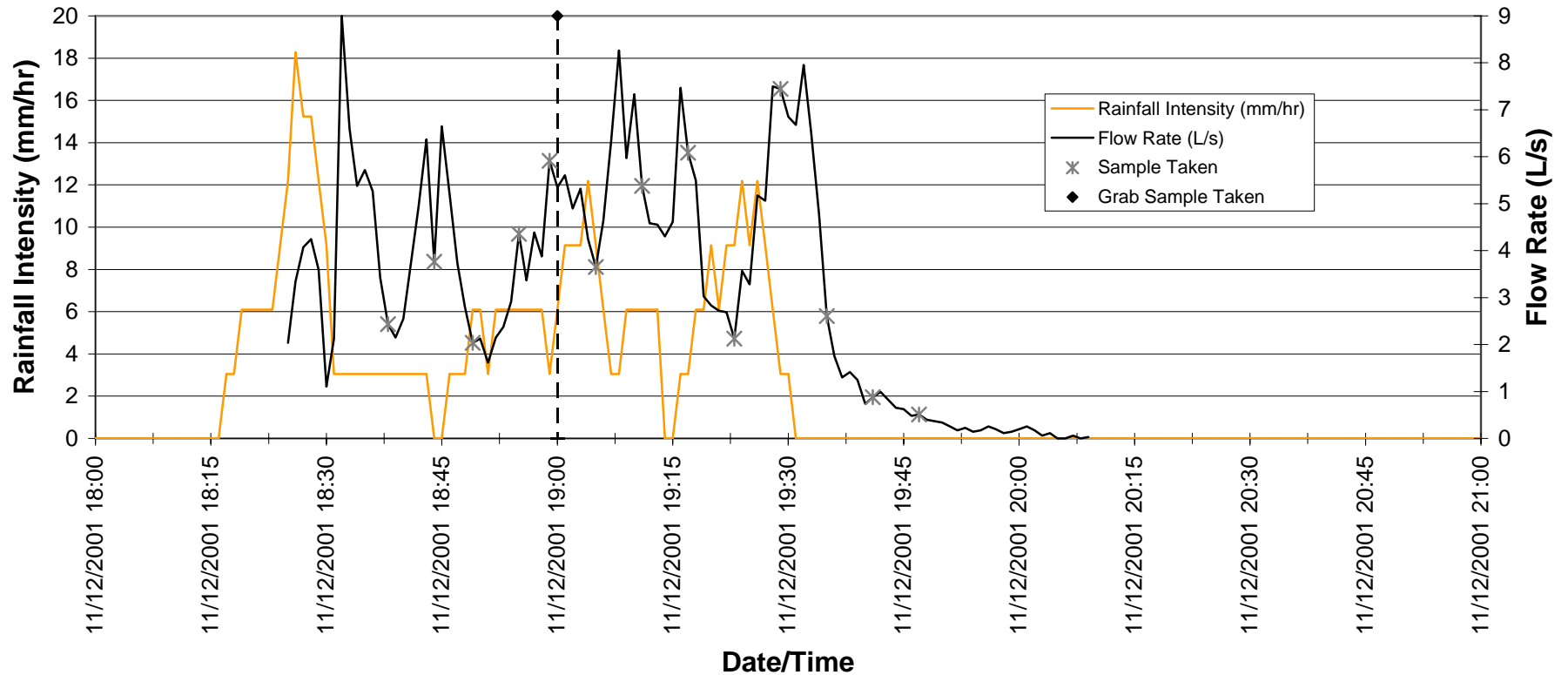
Start Date/Time: 03/17/02 21:40  
Stop Date/Time: 03/22/02 00:08  
Estimated Percent Capture: 100%  
Successful Aliquots: 14

Notes:

## Event Summary

Site: 785L (12-220)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 0.599



### Rain Data

Start Date/Time: 11/12/01 18:17  
Stop Date/Time: 11/12/01 19:26  
Event Rain (mm): 7.37  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 11/12/01 18:25  
Stop Date/Time: 11/12/01 20:09  
Total Flow Volume (L): 20058  
Peak Flow (L/s): 9.00  
Observed Runoff Coefficient: 0.455

### Sample Data

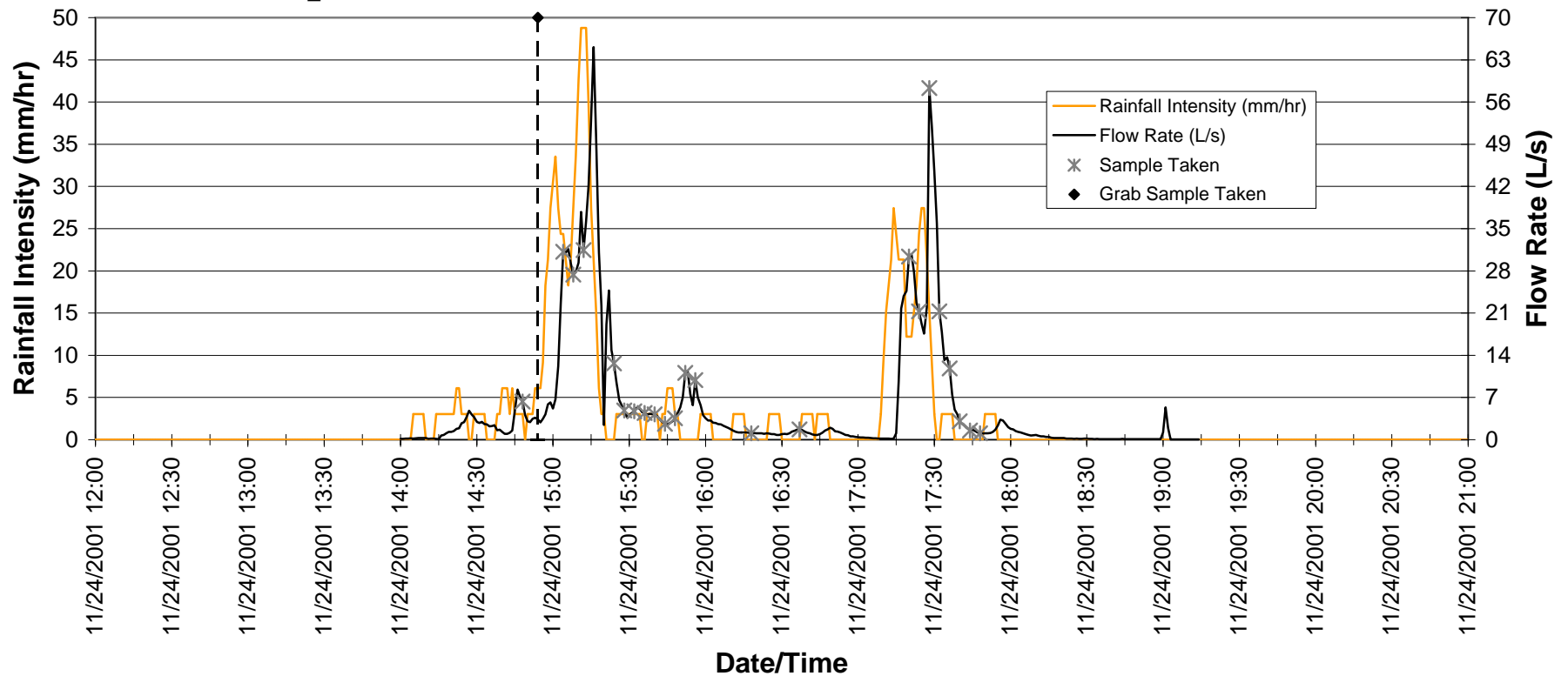
Start Date/Time: 11/12/01 18:25  
Stop Date/Time: 11/12/01 19:47  
Estimated Percent Capture: 93%  
Avg. Successful Aliquots/Bottle: 12  
Max. Successful Aliquots (Bottle#1): 13

Notes:

## Event Summary

Site: 785L (12-220)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 0.599



### Rain Data

Start Date/Time: 11/24/01 14:05  
Stop Date/Time: 11/24/01 17:50  
Event Rain (mm): 22.61  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 11/24/01 14:00  
Stop Date/Time: 11/24/01 19:14  
Total Flow Volume (L): 103793  
Peak Flow (L/s): 65.12  
Observed Runoff Coefficient: 0.767

### Sample Data

Start Date/Time: 11/24/01 14:00  
Stop Date/Time: 11/24/01 17:50  
Estimated Percent Capture: 96%  
Successful Aliquots: 23

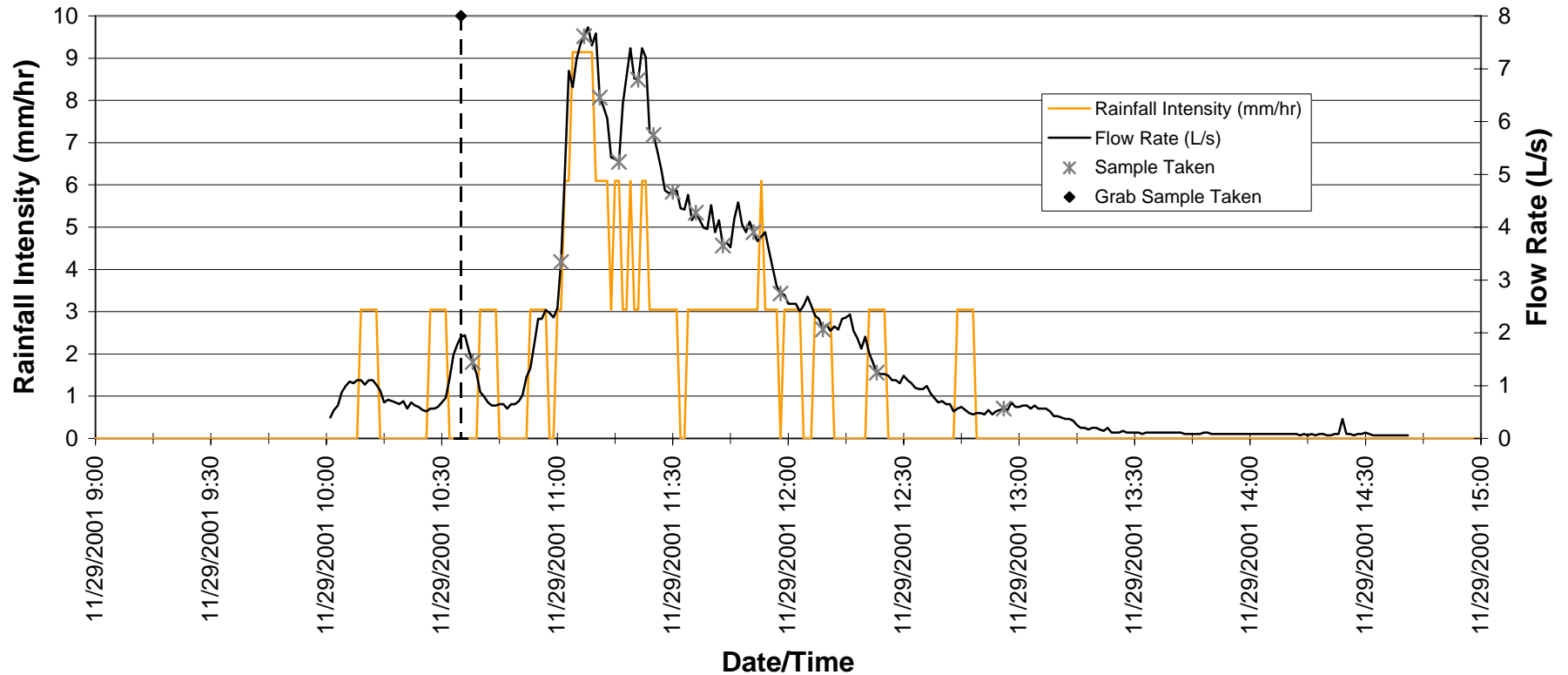
Notes:

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## Event Summary

Site: 785L (12-220)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 0.599



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:01  
Stop Date/Time: 11/29/01 14:41  
Total Flow Volume (L): 27475  
Peak Flow (L/s): 7.78  
Observed Runoff Coefficient: 0.752

### Sample Data

Start Date/Time: 11/29/01 10:01  
Stop Date/Time: 11/29/01 12:58  
Estimated Percent Capture: 96%  
Successful Aliquots: 15

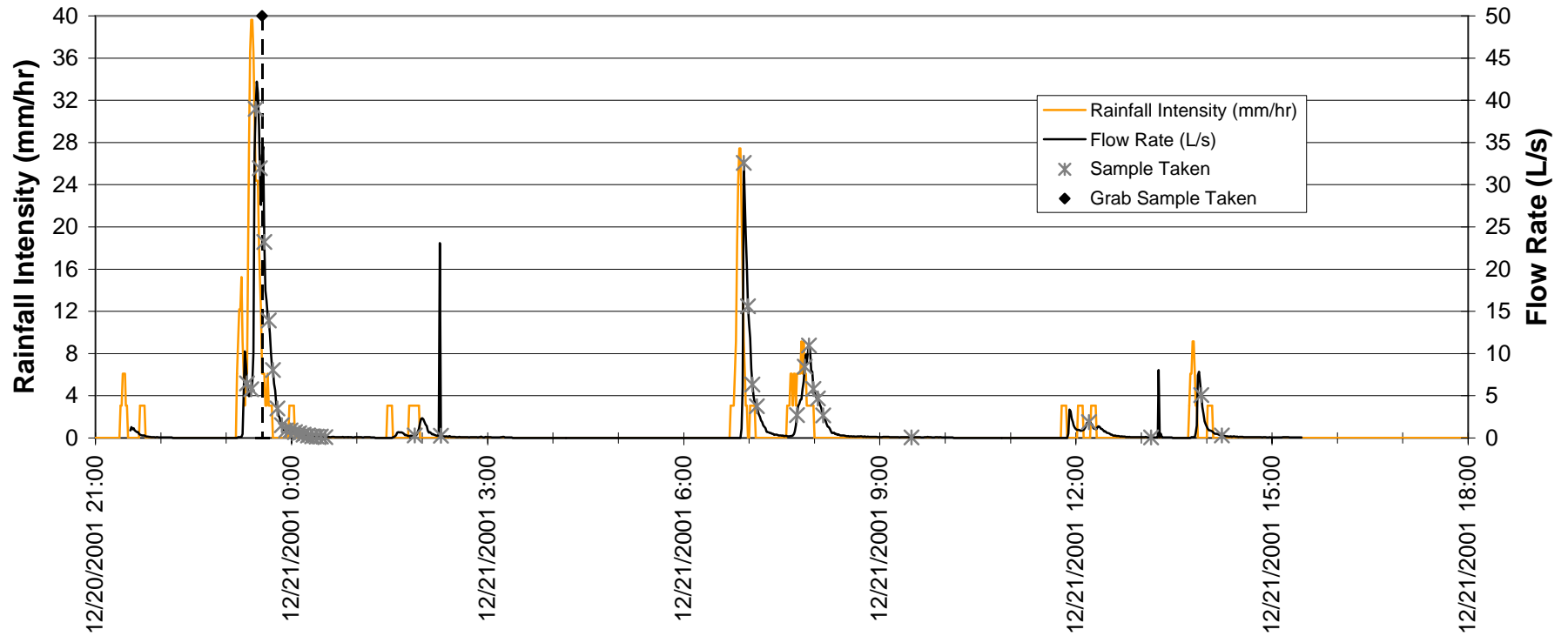
Notes:

## Event Summary

Site: 785L (12-220)

Catchment Area (ha): 0.599

Event: 12/20/2001 to 12/21/2001\_2001-04



### Rain Data

Start Date/Time: 12/20/01 21:23  
Stop Date/Time: 12/21/01 14:01  
Event Rain (mm): 16.76  
Max Intensity (mm/hr): 39.62

### Date/Time

### Runoff Data

Start Date/Time: 12/20/01 21:32  
Stop Date/Time: 12/21/01 15:27  
Total Flow Volume (L): 68879  
Peak Flow (L/s): 42.22  
Observed Runoff Coefficient: 0.686

### Sample Data

Start Date/Time: 12/20/01 21:32  
Stop Date/Time: 12/21/01 14:16  
Estimated Percent Capture: 99%  
Successful Aliquots: 36

Notes:

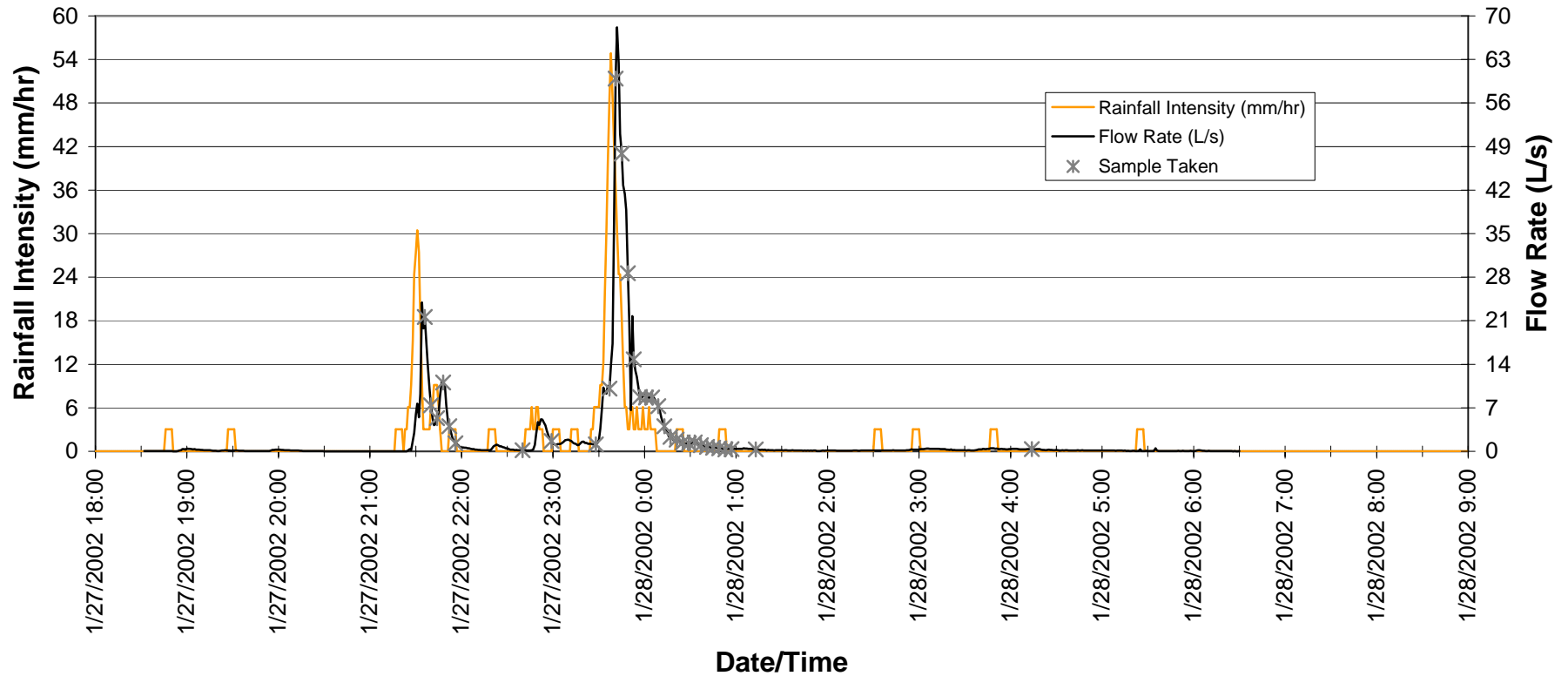
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## Event Summary

Site: 785L (12-220)

Catchment Area (ha): 0.599

Event: 1/27/2002 to 1/28/2002\_2001-05



### Rain Data

Start Date/Time: 01/27/02 18:46  
 Stop Date/Time: 01/28/02 05:23  
 Event Rain (mm): 17.78  
 Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 01/27/02 18:32  
 Stop Date/Time: 01/28/02 06:30  
 Total Flow Volume (L): 76112  
 Peak Flow (L/s): 68.15  
 Observed Runoff Coefficient: 0.715

### Sample Data

Start Date/Time: 01/27/02 18:32  
 Stop Date/Time: 01/28/02 04:16  
 Estimated Percent Capture: 99%  
 Successful Aliquots: 32

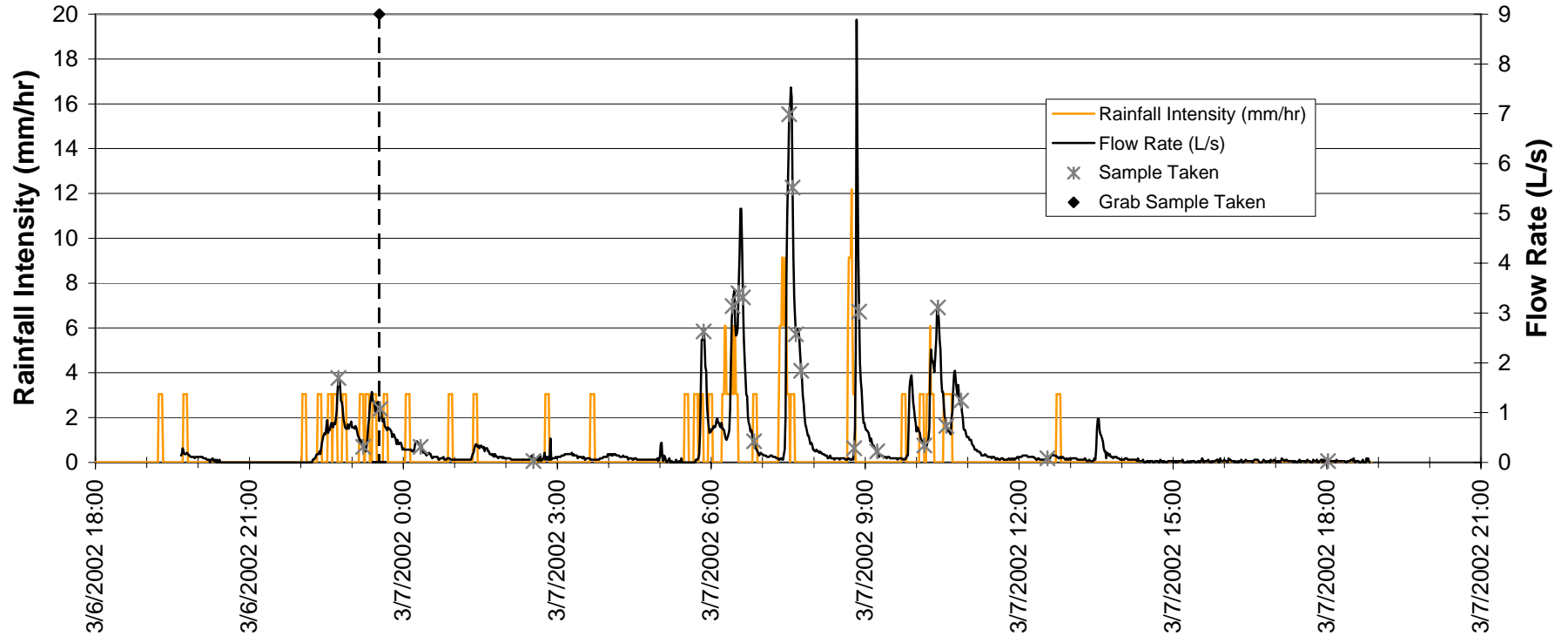
Notes:

## Event Summary

Site: 785L (12-220)

Catchment Area (ha): 0.599

Event: 3/6/2002 to 3/7/2002\_2001-06



### Rain Data

Start Date/Time: 03/06/02 19:14  
 Stop Date/Time: 03/07/02 12:44  
 Event Rain (mm): 10.92  
 Max Intensity (mm/hr): 12.19

### Runoff Data

Start Date/Time: 03/06/02 19:40  
 Stop Date/Time: 03/07/02 18:50  
 Total Flow Volume (L): 28543  
 Peak Flow (L/s): 8.89  
 Observed Runoff Coefficient: 0.436

### Sample Data

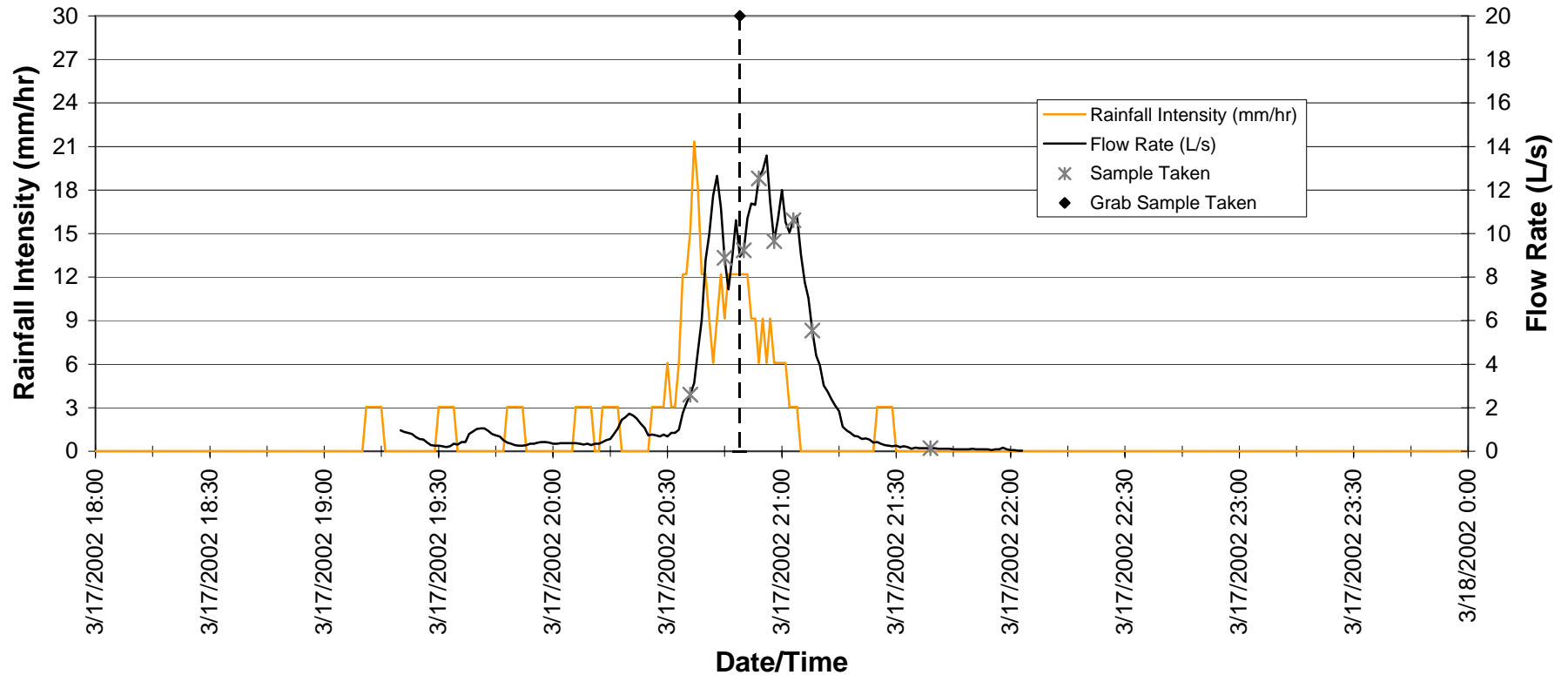
Start Date/Time: 03/06/02 19:40  
 Stop Date/Time: 03/07/02 18:17  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 23

Notes:

## Event Summary

Site: 785L (12-220)  
Event: 3/17/2002\_2001-07

Catchment Area (ha): 0.599



### Rain Data

Start Date/Time: 03/17/02 19:11  
Stop Date/Time: 03/17/02 21:25  
Event Rain (mm): 7.11  
Max Intensity (mm/hr): 21.34

### Runoff Data

Start Date/Time: 03/17/02 19:20  
Stop Date/Time: 03/17/02 22:03  
Total Flow Volume (L): 23656  
Peak Flow (L/s): 13.58  
Observed Runoff Coefficient: 0.555

### Sample Data

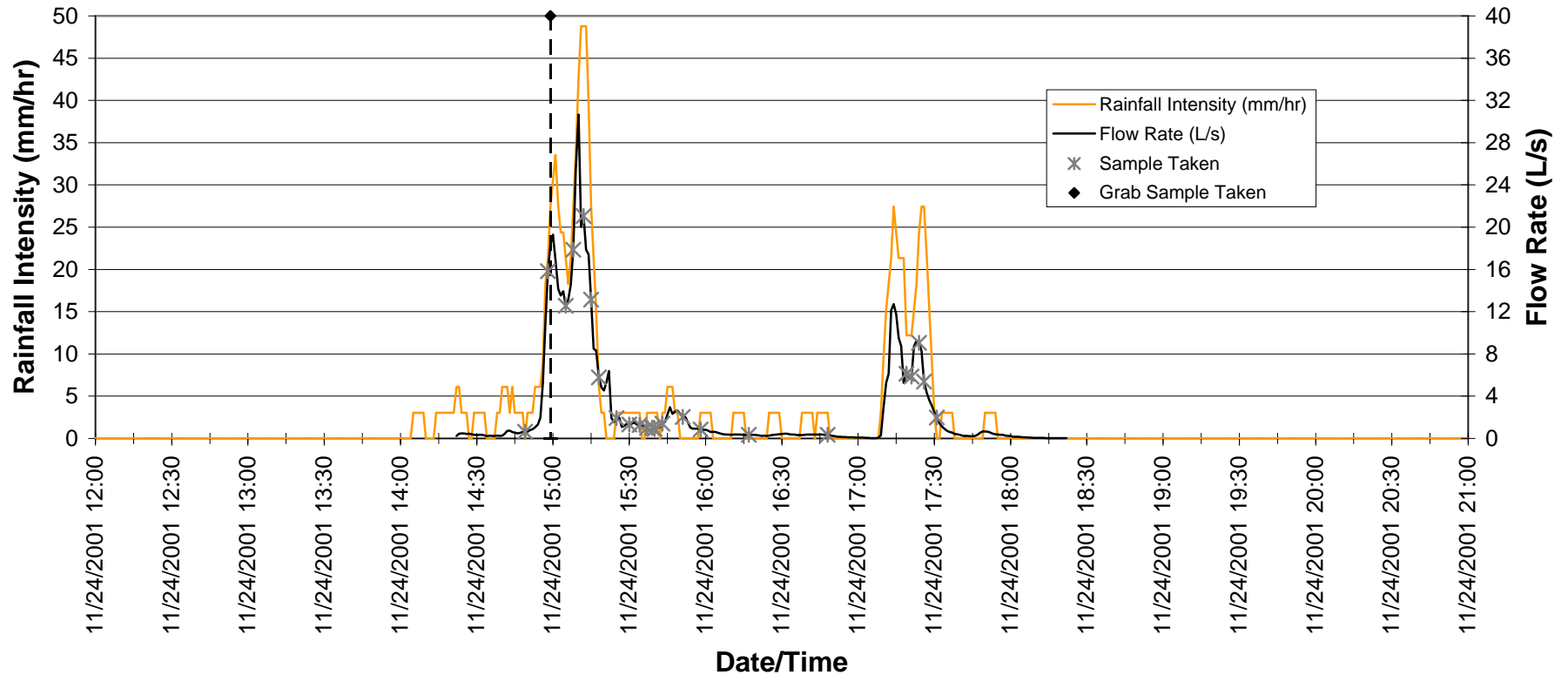
Start Date/Time: 03/17/02 19:20  
Stop Date/Time: 03/17/02 21:41  
Estimated Percent Capture: 100%  
Successful Aliquots: 8

Notes:

## Event Summary

Site: 785L (12-221)  
Event: 11/24/2001\_2001-01

Catchment Area (ha): 0.283



### Rain Data

Start Date/Time: 11/24/01 14:05  
Stop Date/Time: 11/24/01 17:50  
Event Rain (mm): 22.61  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 11/24/01 14:22  
Stop Date/Time: 11/24/01 18:22  
Total Flow Volume (L): 38021  
Peak Flow (L/s): 30.65  
Observed Runoff Coefficient: 0.594

### Sample Data

Start Date/Time: 11/24/01 14:22  
Stop Date/Time: 11/24/01 17:32  
Estimated Percent Capture: 89%  
Avg. Successful Aliquots/Bottle: 22  
Max. Successful Aliquots (Bottle#1): 23

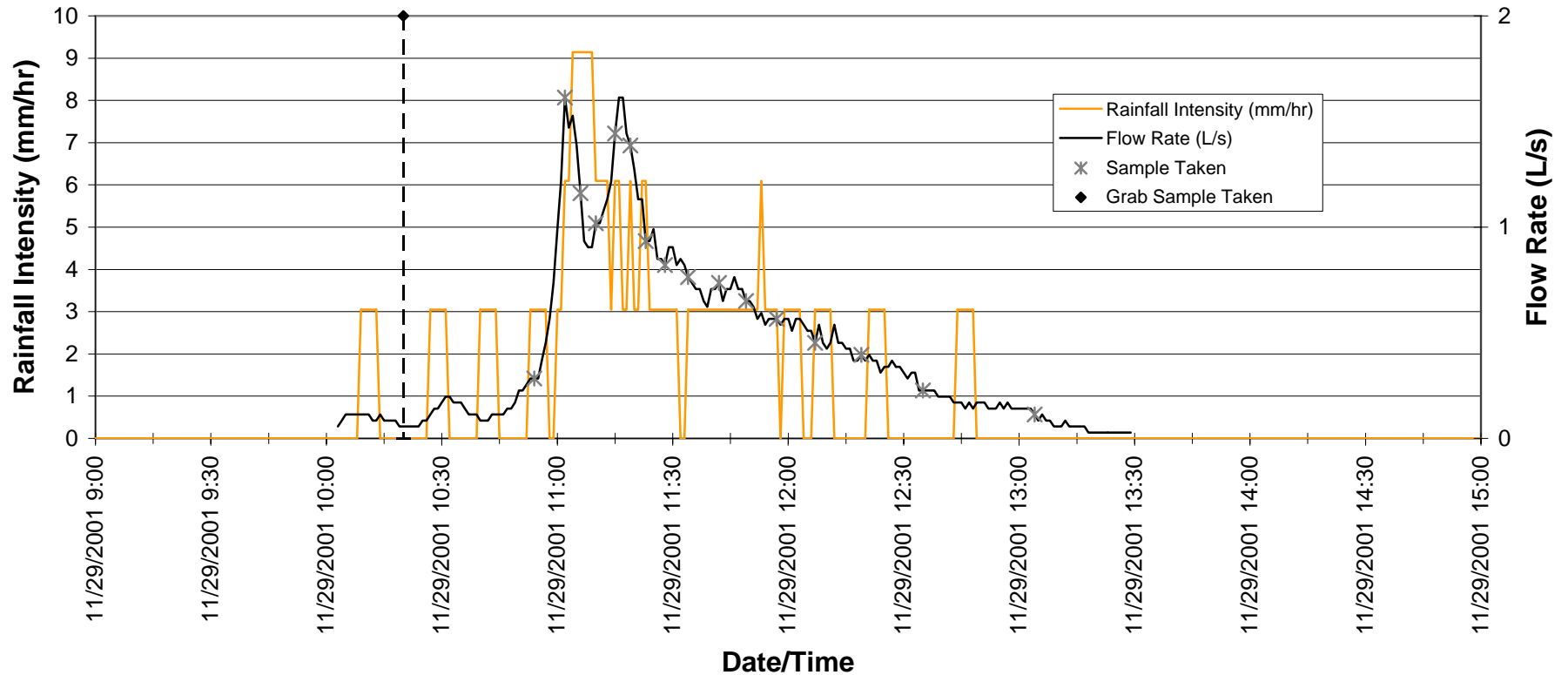
Notes:

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## Event Summary

Site: 785L (12-221)  
Event: 11/29/2001\_2001-02

Catchment Area (ha): 0.283



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:03  
Stop Date/Time: 11/29/01 13:29  
Total Flow Volume (L): 5093  
Peak Flow (L/s): 1.61  
Observed Runoff Coefficient: 0.295

### Sample Data

Start Date/Time: 11/29/01 10:03  
Stop Date/Time: 11/29/01 13:07  
Estimated Percent Capture: 99%  
Successful Aliquots: 16

Notes:

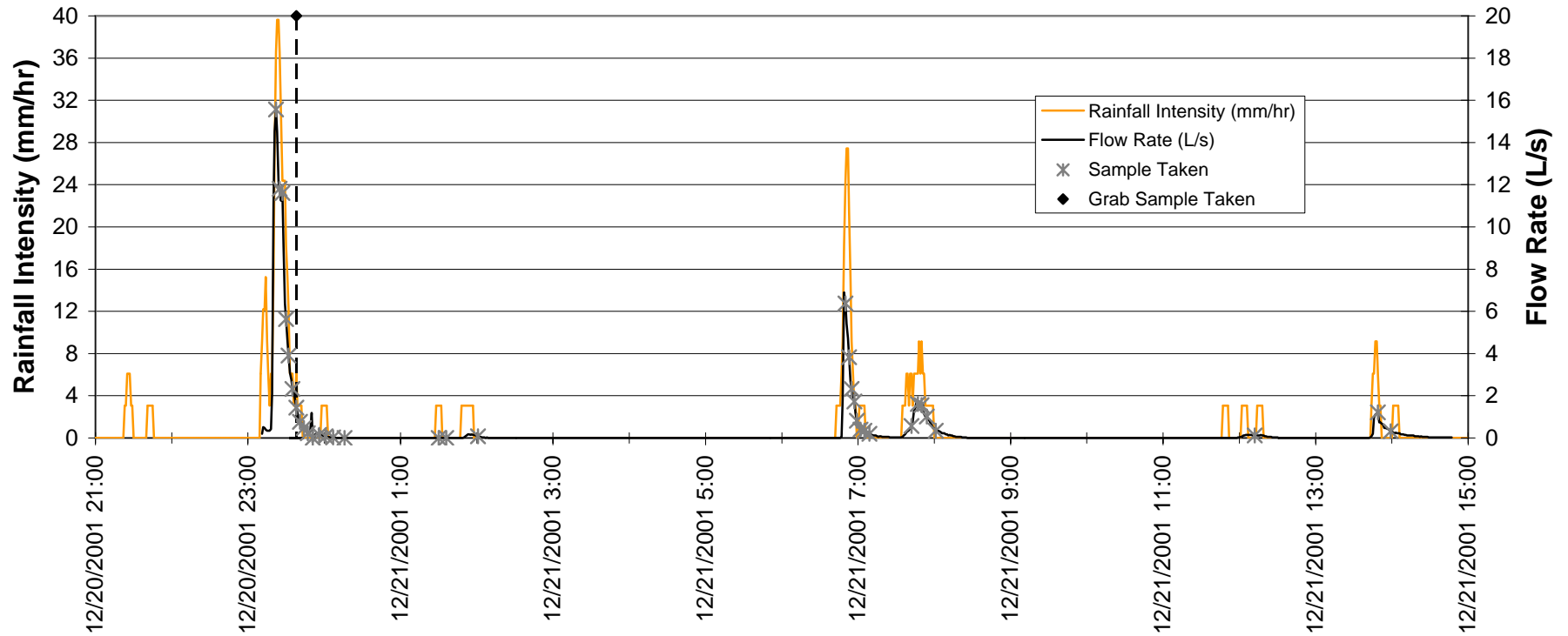
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## Event Summary

Site: 785L (12-221)

Catchment Area (ha): 0.283

Event: 12/20/2001 to 12/21/2001\_2001-03



### Date/Time

#### Rain Data

Start Date/Time: 12/20/01 21:23  
Stop Date/Time: 12/21/01 14:01  
Event Rain (mm): 16.76  
Max Intensity (mm/hr): 39.62

#### Runoff Data

Start Date/Time: 12/20/01 23:11  
Stop Date/Time: 12/21/01 14:47  
Total Flow Volume (L): 14995  
Peak Flow (L/s): 15.57  
Observed Runoff Coefficient: 0.316

#### Sample Data

Start Date/Time: 12/20/01 23:11  
Stop Date/Time: 12/21/01 14:35  
Estimated Percent Capture: 94%  
Avg. Successful Aliquots/Bottle: 35  
Max. Successful Aliquots (Bottle#4): 36

Notes:

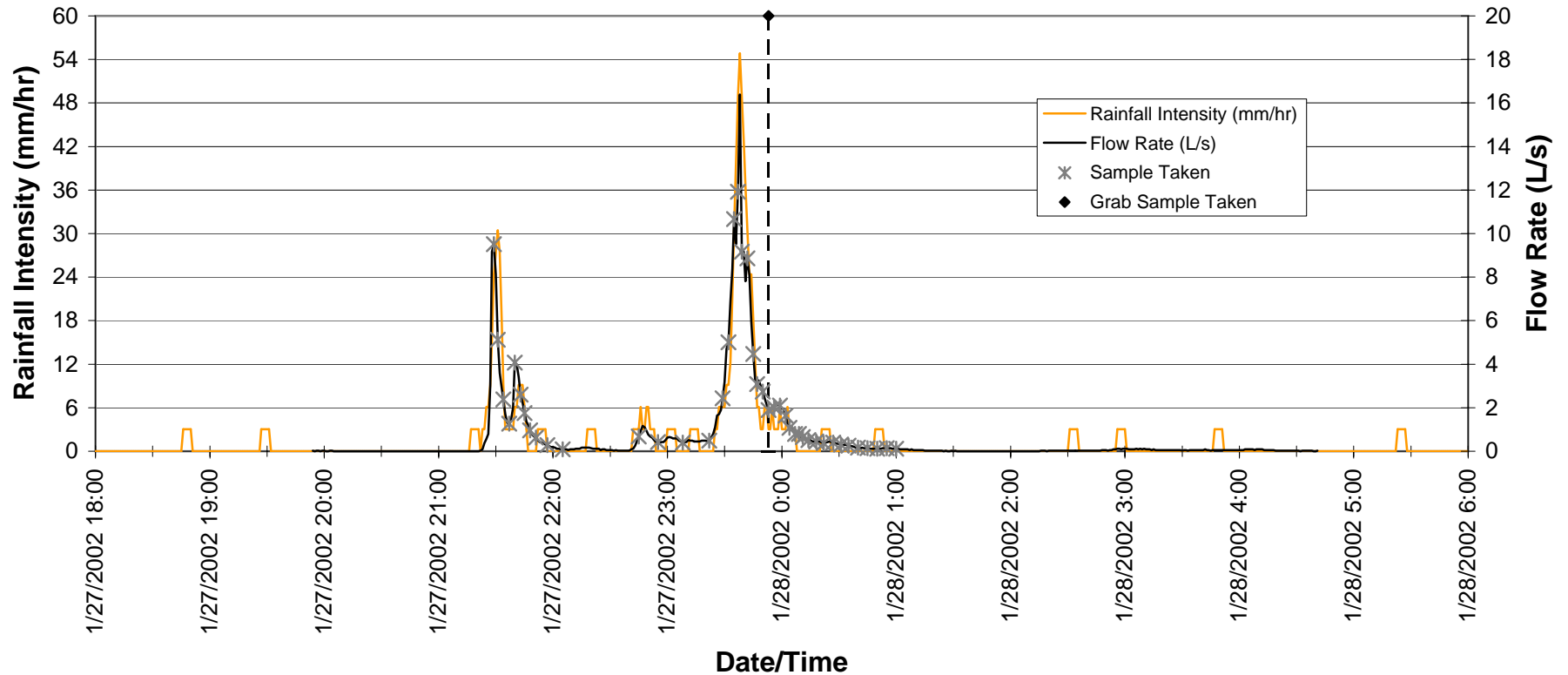
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## Event Summary

Site: 785L (12-221)

Catchment Area (ha): 0.283

Event: 1/27/2002 to 1/28/2002\_2001-04



### Rain Data

Start Date/Time: 01/27/02 18:46  
 Stop Date/Time: 01/28/02 05:23  
 Event Rain (mm): 17.78  
 Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 01/27/02 19:54  
 Stop Date/Time: 01/28/02 04:41  
 Total Flow Volume (L): 18985  
 Peak Flow (L/s): 16.39  
 Observed Runoff Coefficient: 0.377

### Sample Data

Start Date/Time: 01/27/02 19:54  
 Stop Date/Time: 01/28/02 01:03  
 Estimated Percent Capture: 97%  
 Successful Aliquots: 43

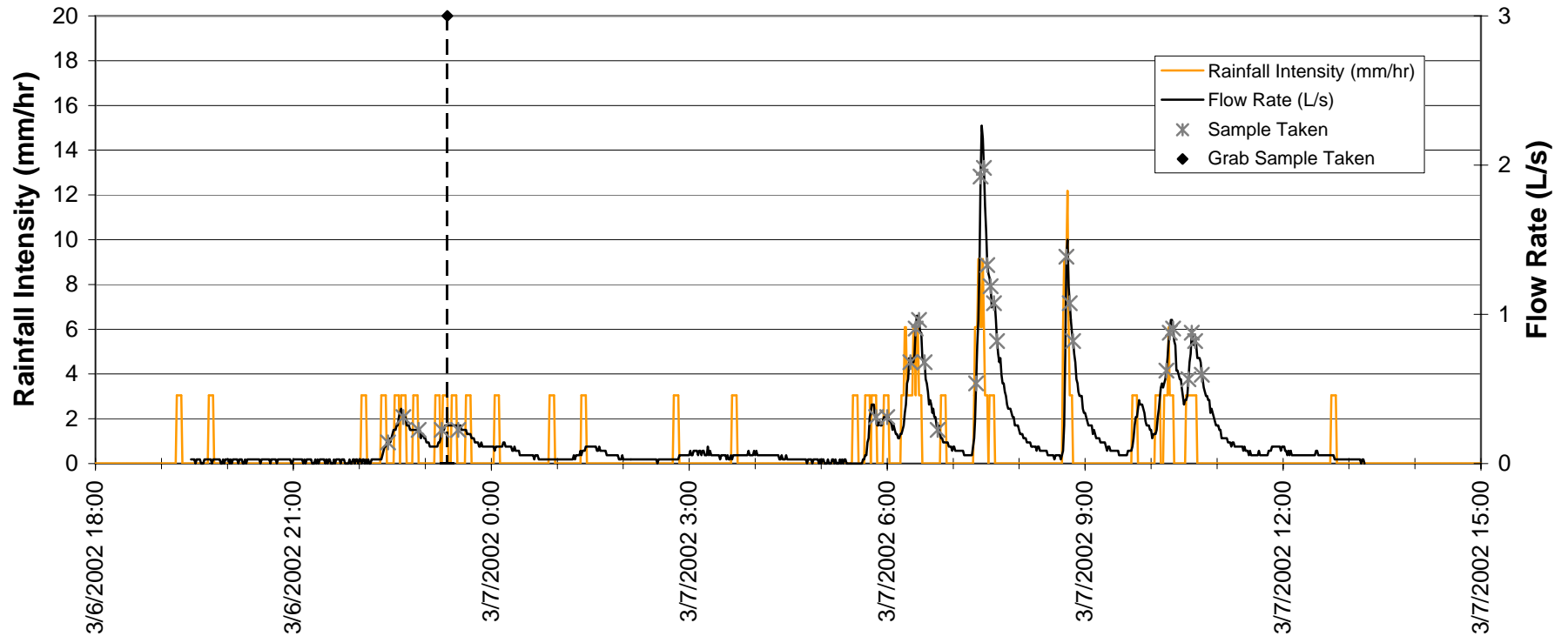
Notes:

## Event Summary

Site: 785L (12-221)

Catchment Area (ha): 0.283

Event: 3/6/2002 to 3/7/2002\_2001-05



### Rain Data

Start Date/Time: 03/06/02 19:14  
 Stop Date/Time: 03/07/02 12:44  
 Event Rain (mm): 10.92  
 Max Intensity (mm/hr): 12.19

### Date/Time

### Runoff Data

Start Date/Time: 03/06/02 19:27  
 Stop Date/Time: 03/07/02 13:14  
 Total Flow Volume (L): 10627  
 Peak Flow (L/s): 2.26  
 Observed Runoff Coefficient: 0.344

### Sample Data

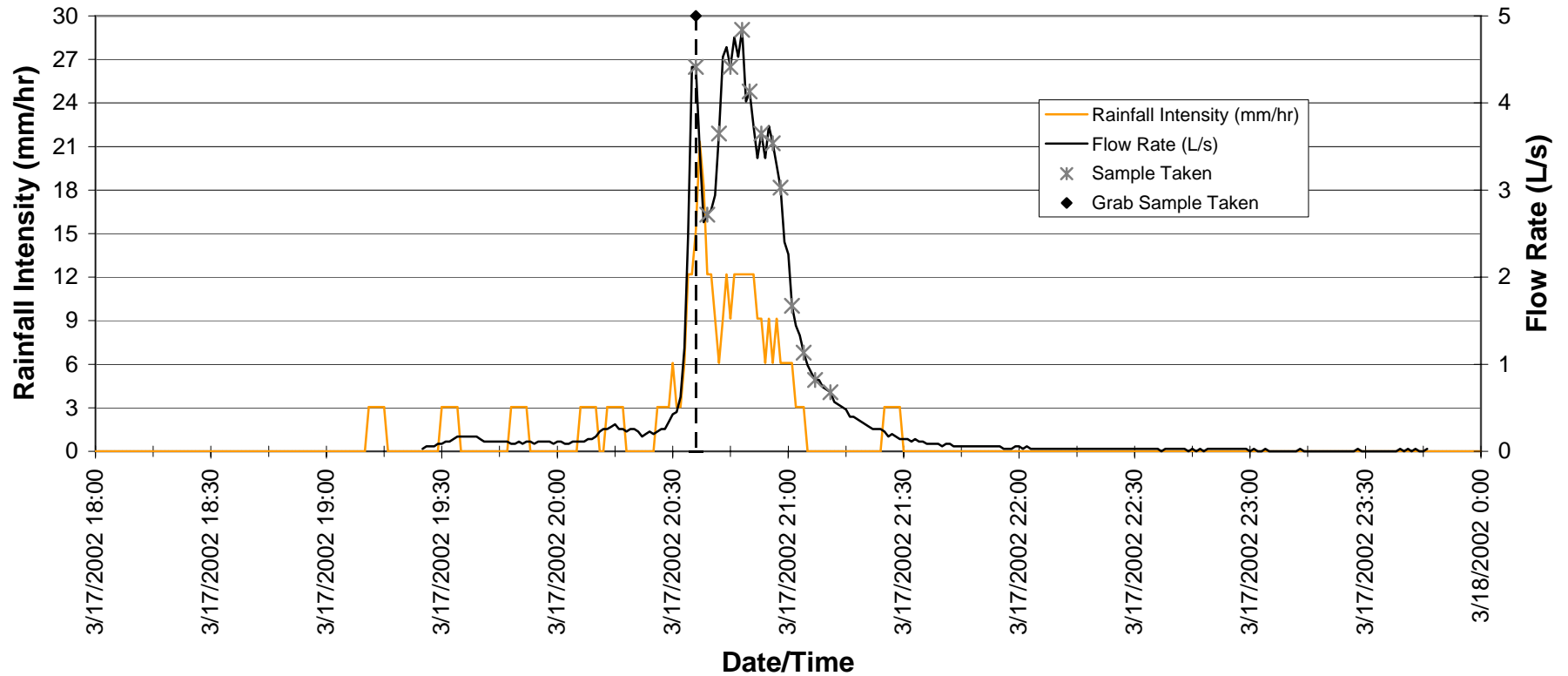
Start Date/Time: 03/06/02 19:27  
 Stop Date/Time: 03/07/02 11:06  
 Estimated Percent Capture: 81%  
 Avg. Successful Aliquots/Bottle: 36  
 Max. Successful Aliquots (Bottle#2): 38

Notes:

## Event Summary

Site: 785L (12-221)  
Event: 3/17/02\_2001-06

Catchment Area (ha): 0.283



### Rain Data

Start Date/Time: 03/17/02 19:11  
Stop Date/Time: 03/17/02 21:25  
Event Rain (mm): 7.11  
Max Intensity (mm/hr): 21.34

### Runoff Data

Start Date/Time: 03/17/02 19:25  
Stop Date/Time: 03/17/02 23:46  
Total Flow Volume (L): 7884  
Peak Flow (L/s): 4.84  
Observed Runoff Coefficient: 0.392

### Sample Data

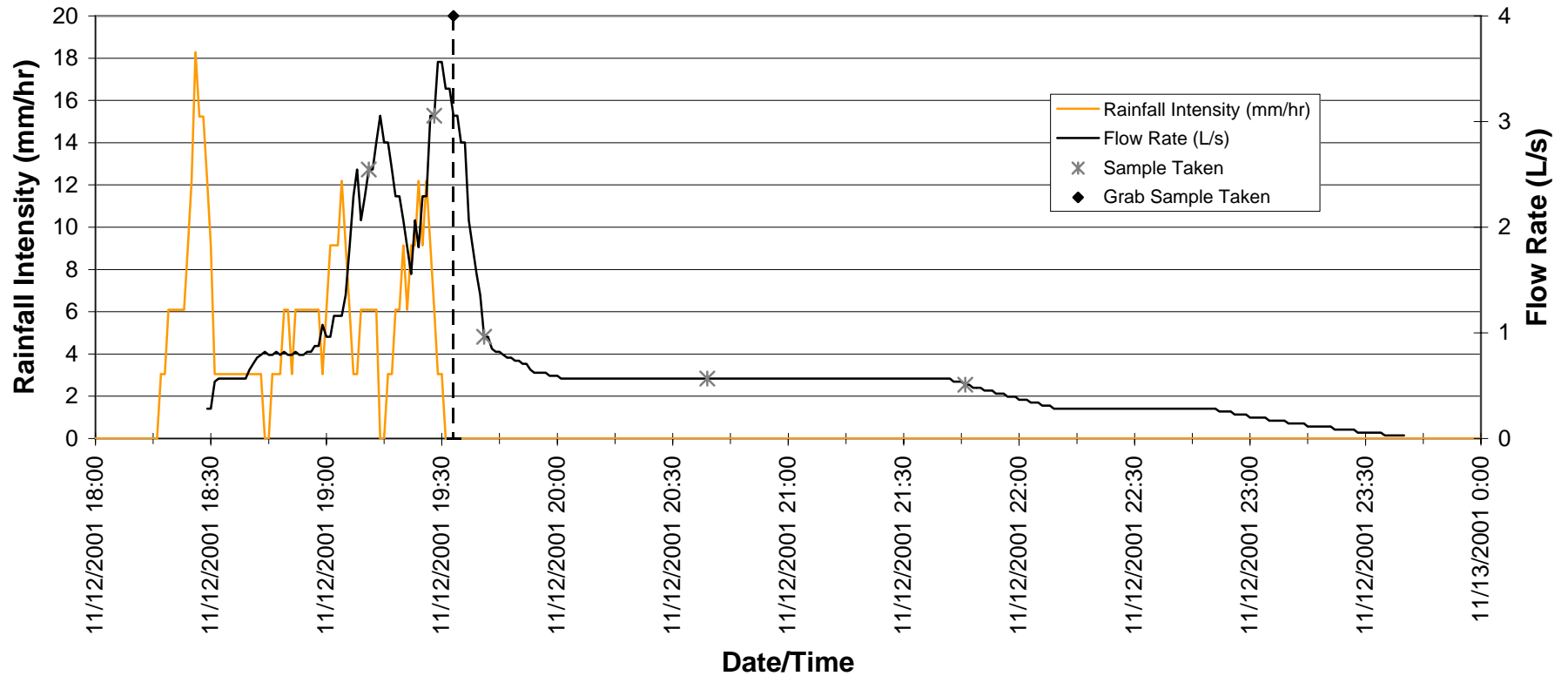
Start Date/Time: 03/17/02 19:25  
Stop Date/Time: 03/17/02 21:27  
Estimated Percent Capture: 93%  
Successful Aliquots: 14

Notes:

## Event Summary

Site: 785L (12-222)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 11/12/01 18:17  
Stop Date/Time: 11/12/01 19:26  
Event Rain (mm): 7.37  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 11/12/01 18:29  
Stop Date/Time: 11/12/01 23:40  
Total Flow Volume (L): 13030  
Peak Flow (L/s): 3.57  
Observed Runoff Coefficient: 0.165

### Sample Data

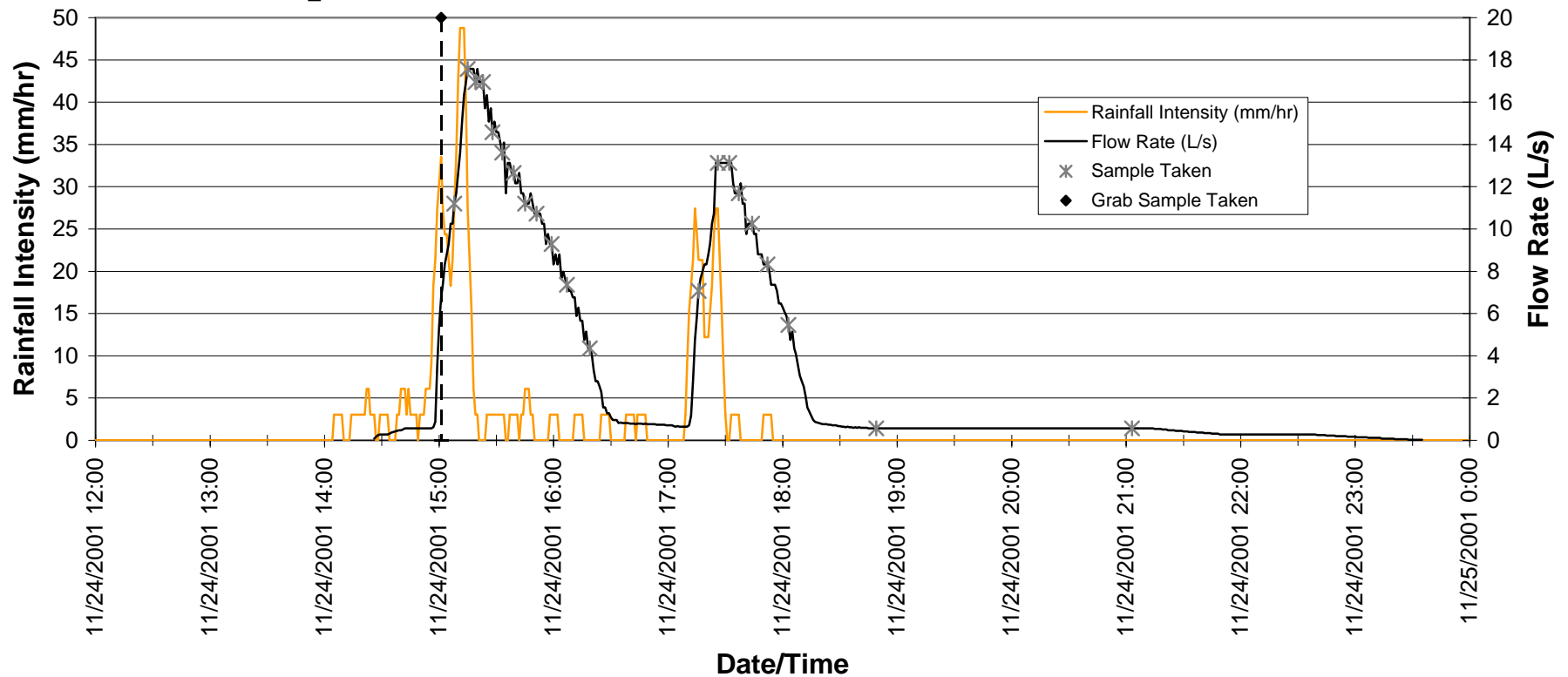
Start Date/Time: 11/12/01 18:29  
Stop Date/Time: 11/12/01 21:47  
Estimated Percent Capture: 88%  
Successful Aliquots: 5

Notes:

## Event Summary

Site: 785L (12-222)  
Event: 11/24/2001\_2001-02

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 11/24/01 14:05  
Stop Date/Time: 11/24/01 17:50  
Event Rain (mm): 22.61  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 11/24/01 14:26  
Stop Date/Time: 11/24/01 23:35  
Total Flow Volume (L): 97764  
Peak Flow (L/s): 17.57  
Observed Runoff Coefficient: 0.404

### Sample Data

Start Date/Time: 11/24/01 14:26  
Stop Date/Time: 11/24/01 21:04  
Estimated Percent Capture: 97%  
Successful Aliquots: 21

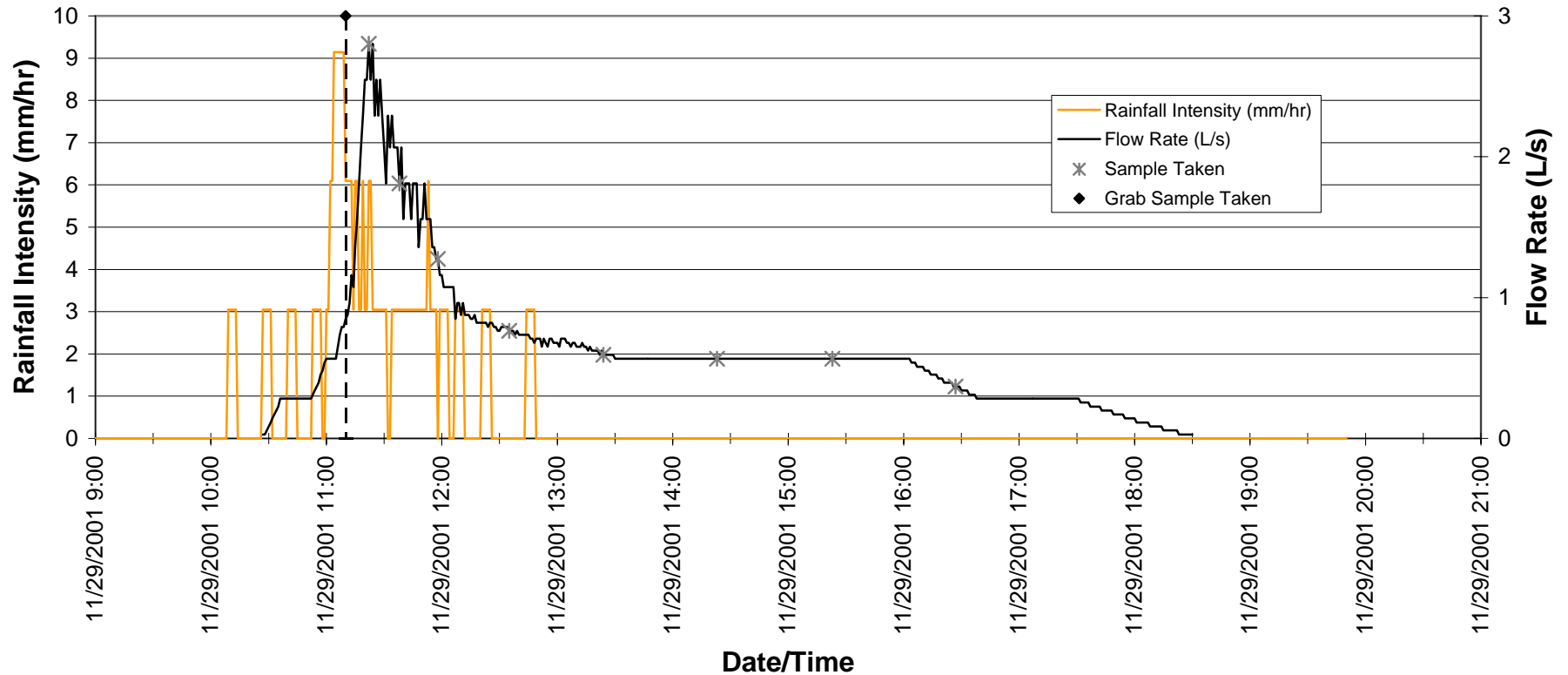
Notes:

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## Event Summary

Site: 785L (12-222)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 10:27  
Stop Date/Time: 11/29/01 18:30  
Total Flow Volume (L): 17938  
Peak Flow (L/s): 2.80  
Observed Runoff Coefficient: 0.275

### Sample Data

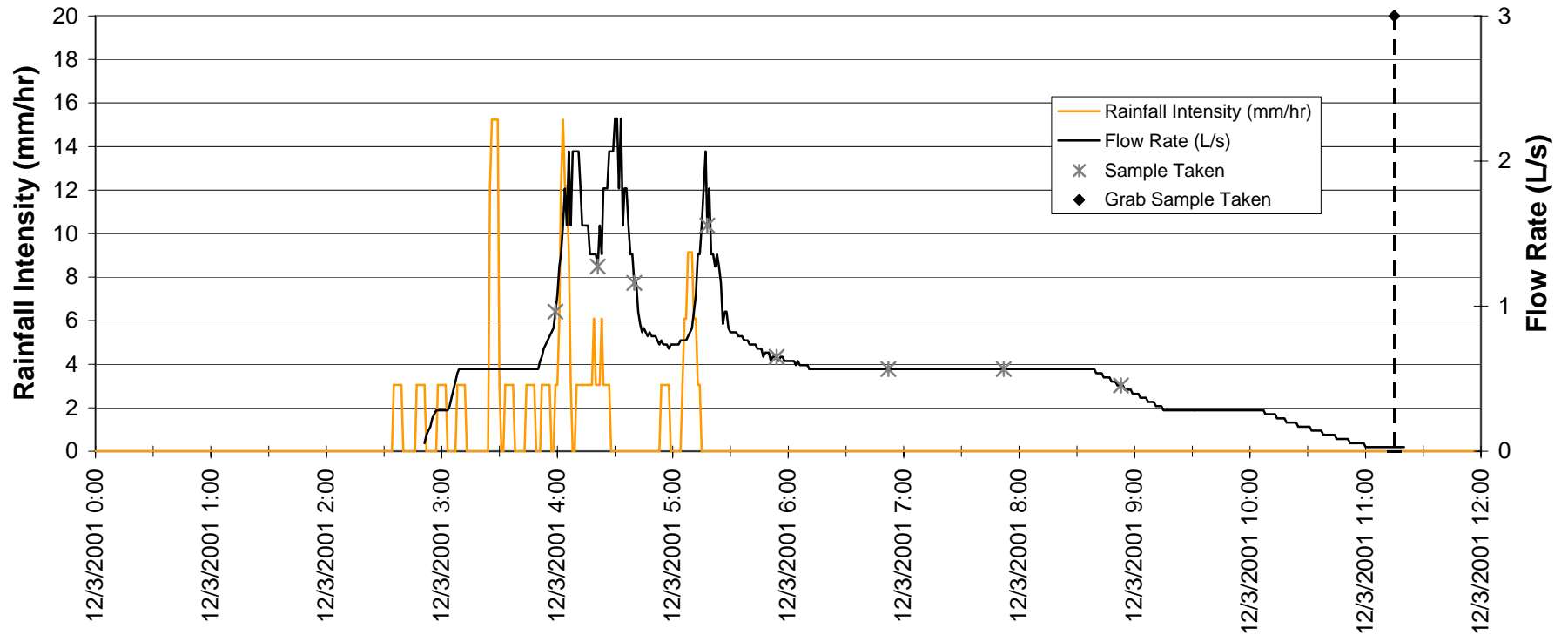
Start Date/Time: 11/29/01 10:27  
Stop Date/Time: 11/29/01 16:28  
Estimated Percent Capture: 91%  
Successful Aliquots: 8

Notes:

## Event Summary

Site: 785L (12-222)  
Event: 12/3/2001\_2001-04

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 12/03/01 02:35  
Stop Date/Time: 12/03/01 05:10  
Event Rain (mm): 6.60  
Max Intensity (mm/hr): 15.24

### Date/Time

### Runoff Data

Start Date/Time: 12/03/01 02:51  
Stop Date/Time: 12/03/01 11:20  
Total Flow Volume (L): 18254  
Peak Flow (L/s): 2.29  
Observed Runoff Coefficient: 0.258

### Sample Data

Start Date/Time: 12/03/01 02:51  
Stop Date/Time: 12/03/01 08:54  
Estimated Percent Capture: 90%  
Successful Aliquots: 8

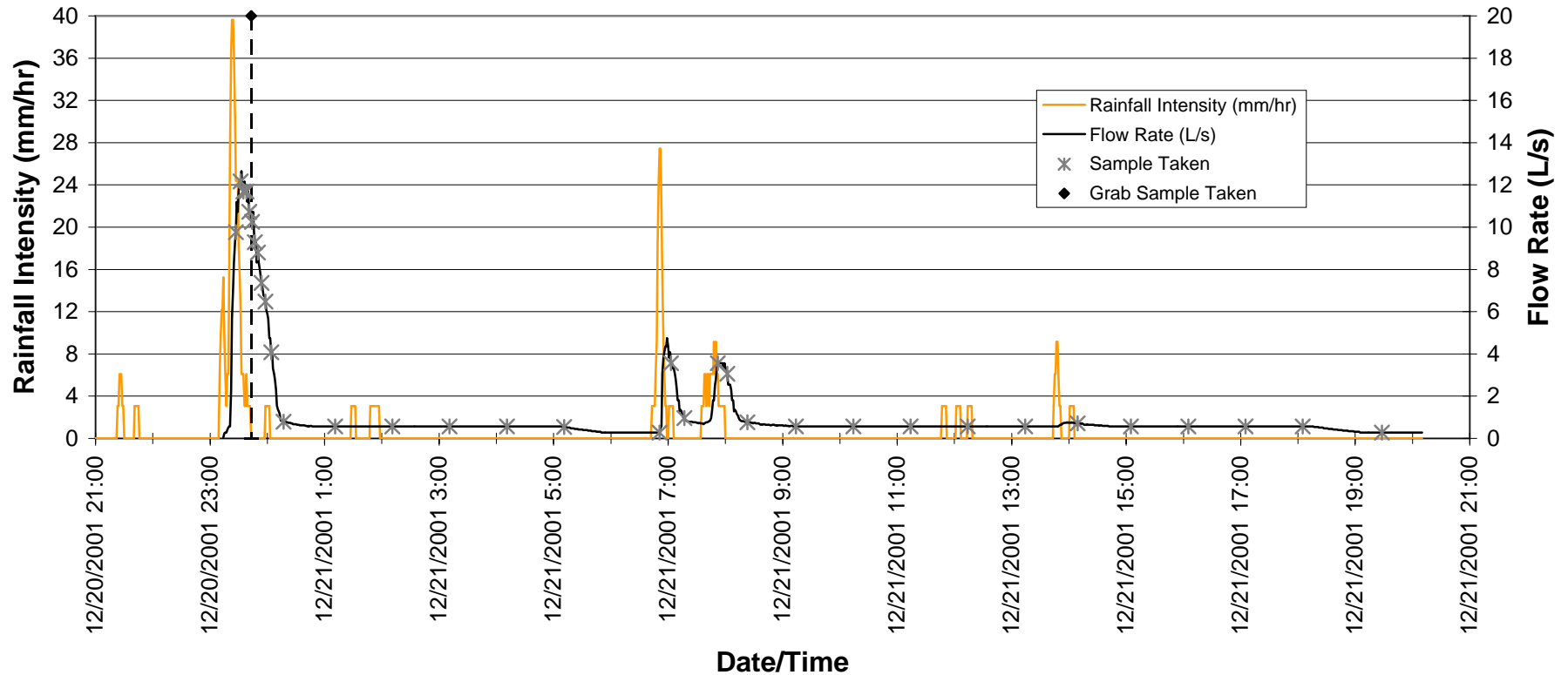
Notes:

## Event Summary

Site: 785L (12-222)

Catchment Area (ha): 1.07

Event: 12/20/2001 to 12/21/2001\_2001-05



### Rain Data

Start Date/Time: 12/20/01 21:23  
Stop Date/Time: 12/21/01 14:01  
Event Rain (mm): 16.76  
Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 12/20/01 23:14  
Stop Date/Time: 12/21/01 20:10  
Total Flow Volume (L): 70039  
Peak Flow (L/s): 12.65  
Observed Runoff Coefficient: 0.390

### Sample Data

Start Date/Time: 12/20/01 23:14  
Stop Date/Time: 12/21/01 19:28  
Estimated Percent Capture: 98%  
Avg. Successful Aliquots/Bottle: 33  
Max. Successful Aliquots (Bottle#1): 34

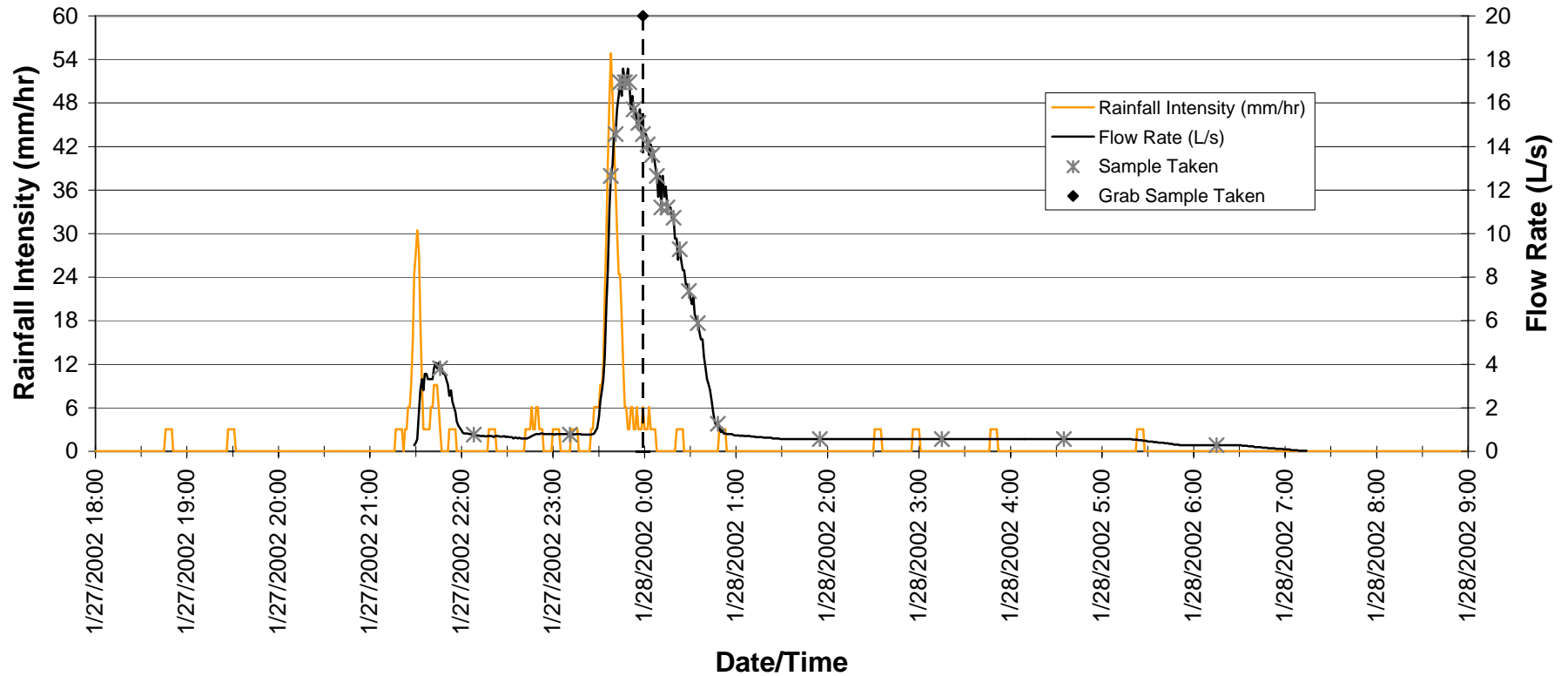
Notes:

## Event Summary

Site: 785L (12-222)

Catchment Area (ha): 1.07

Event: 1/27/2002 to 1/28/2002\_2001-06



### Rain Data

Start Date/Time: 01/27/02 18:46  
 Stop Date/Time: 01/28/02 05:23  
 Event Rain (mm): 17.78  
 Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 01/27/02 21:29  
 Stop Date/Time: 01/28/02 07:14  
 Total Flow Volume (L): 68593  
 Peak Flow (L/s): 17.57  
 Observed Runoff Coefficient: 0.361

### Sample Data

Start Date/Time: 01/27/02 21:29  
 Stop Date/Time: 01/28/02 06:17  
 Estimated Percent Capture: 99%  
 Successful Aliquots: 25

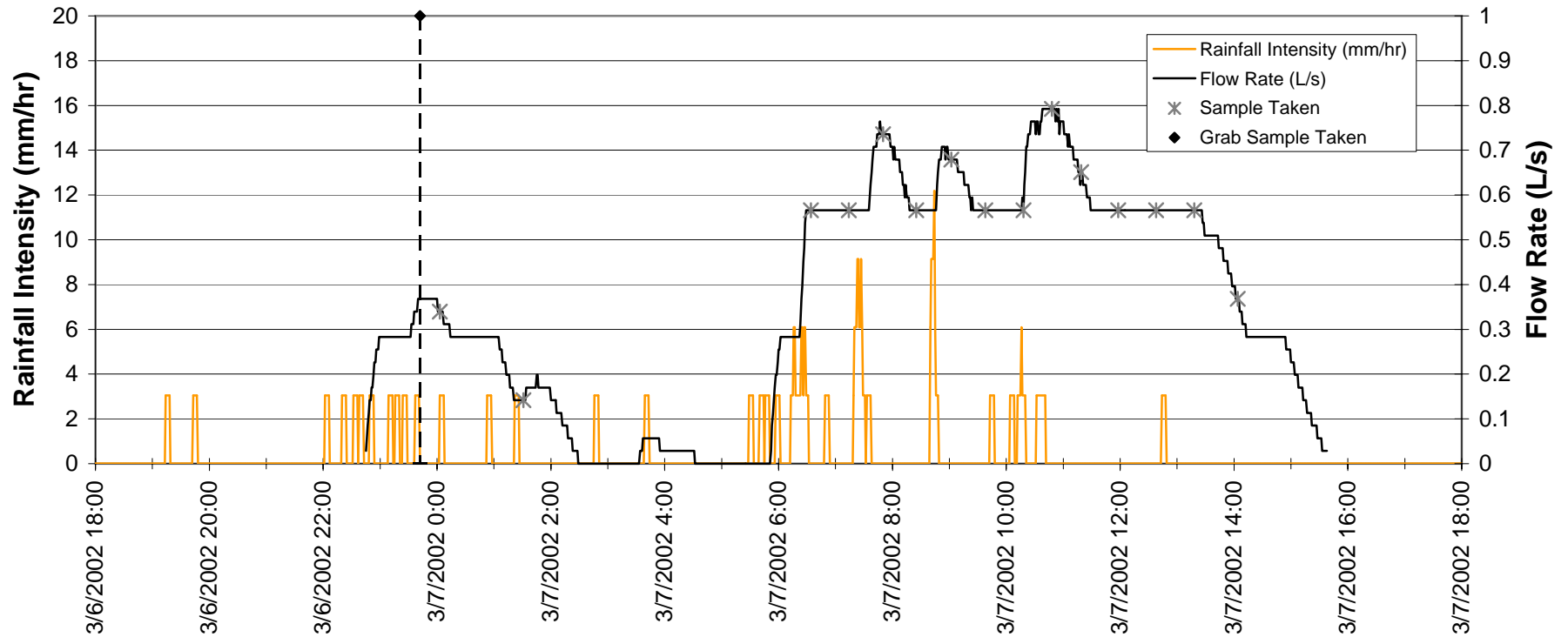
Notes:

## Event Summary

Site: 785L (12-222)

Catchment Area (ha): 1.07

Event: 3/6/2002 to 3/7/2002\_2001-07



### Rain Data

Start Date/Time: 03/06/02 19:14  
 Stop Date/Time: 03/07/02 12:44  
 Event Rain (mm): 10.92  
 Max Intensity (mm/hr): 12.19

### Date/Time

### Runoff Data

Start Date/Time: 03/06/02 22:45  
 Stop Date/Time: 03/07/02 15:38  
 Total Flow Volume (L): 21575  
 Peak Flow (L/s): 0.79  
 Observed Runoff Coefficient: 0.185

### Sample Data

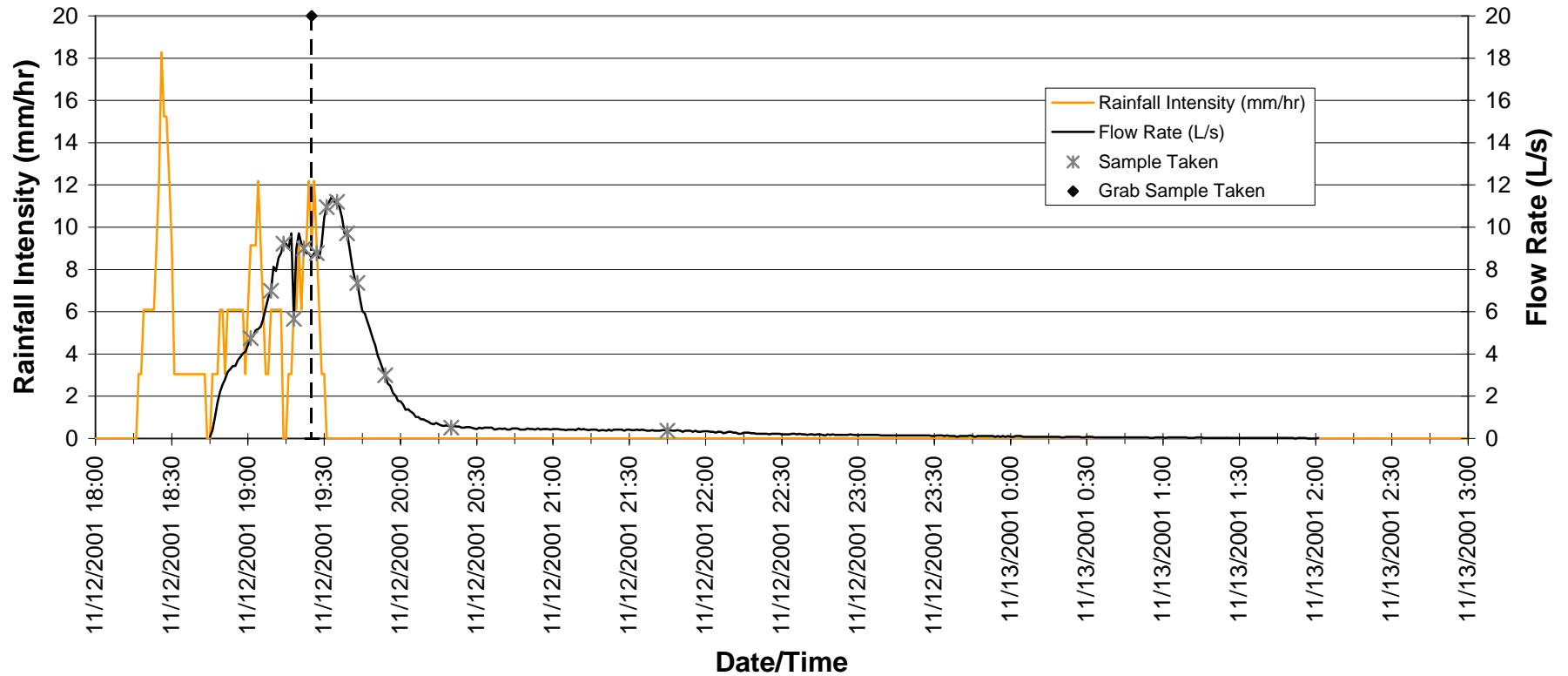
Start Date/Time: 03/06/02 22:45  
 Stop Date/Time: 03/07/02 14:06  
 Estimated Percent Capture: 94%  
 Successful Aliquots: 15

Notes:

## Event Summary

Site: 785L (12-223)  
Event: 11/12/2001\_2001-01

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 11/12/01 18:17  
Stop Date/Time: 11/12/01 19:26  
Event Rain (mm): 7.37  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 11/12/01 18:45  
Stop Date/Time: 11/13/01 02:01  
Total Flow Volume (L): 33707  
Peak Flow (L/s): 11.46  
Observed Runoff Coefficient: 0.428

### Sample Data

Start Date/Time: 11/12/01 18:45  
Stop Date/Time: 11/12/01 21:47  
Estimated Percent Capture: 93%  
Successful Aliquots: 14

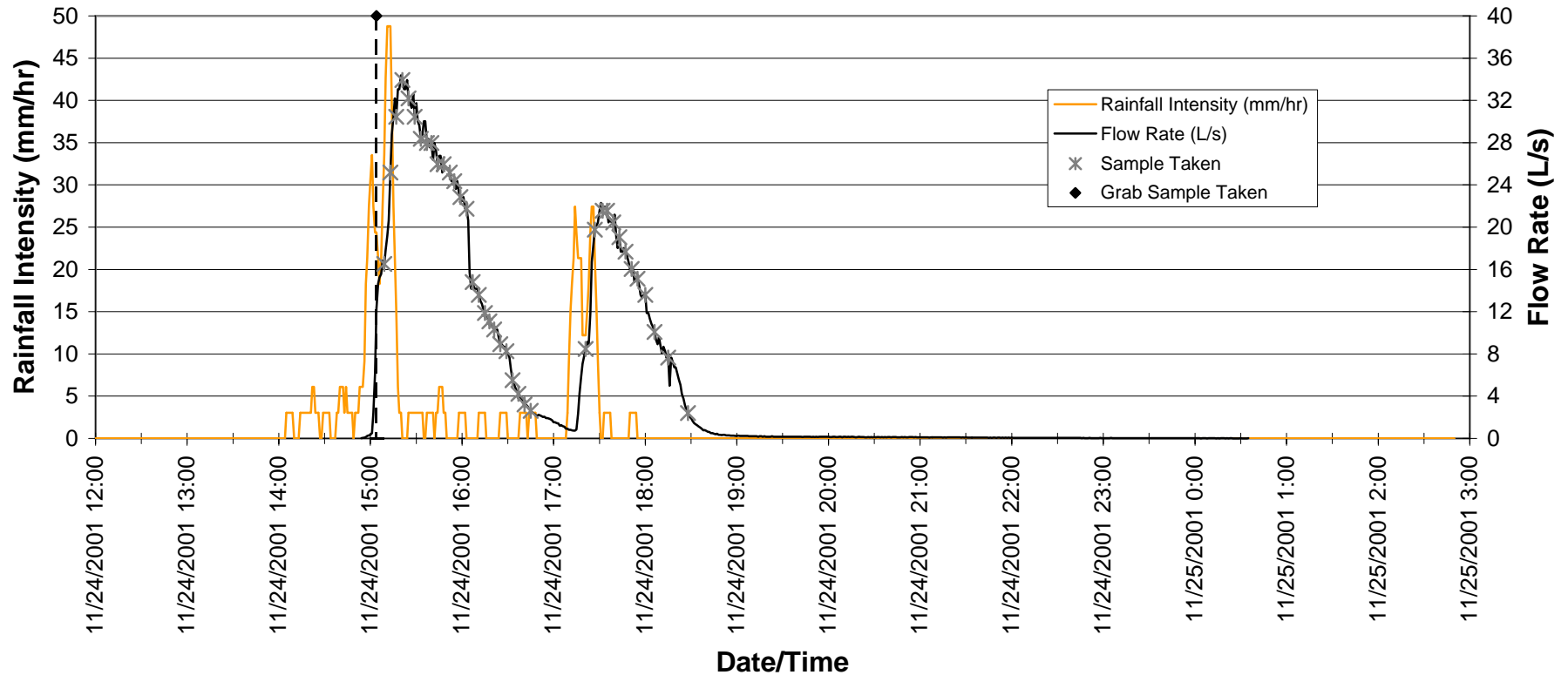
Notes:

## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.07

Event: 11/24/2001 to 11/25/02\_2001-02



### Rain Data

Start Date/Time: 11/24/01 14:05  
Stop Date/Time: 11/24/01 17:50  
Event Rain (mm): 22.61  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 11/24/01 14:54  
Stop Date/Time: 11/25/01 00:35  
Total Flow Volume (L): 179895  
Peak Flow (L/s): 34.38  
Observed Runoff Coefficient: 0.744

### Sample Data

Start Date/Time: 11/24/01 14:54  
Stop Date/Time: 11/24/01 18:30  
Estimated Percent Capture: 98%  
Successful Aliquots: 39

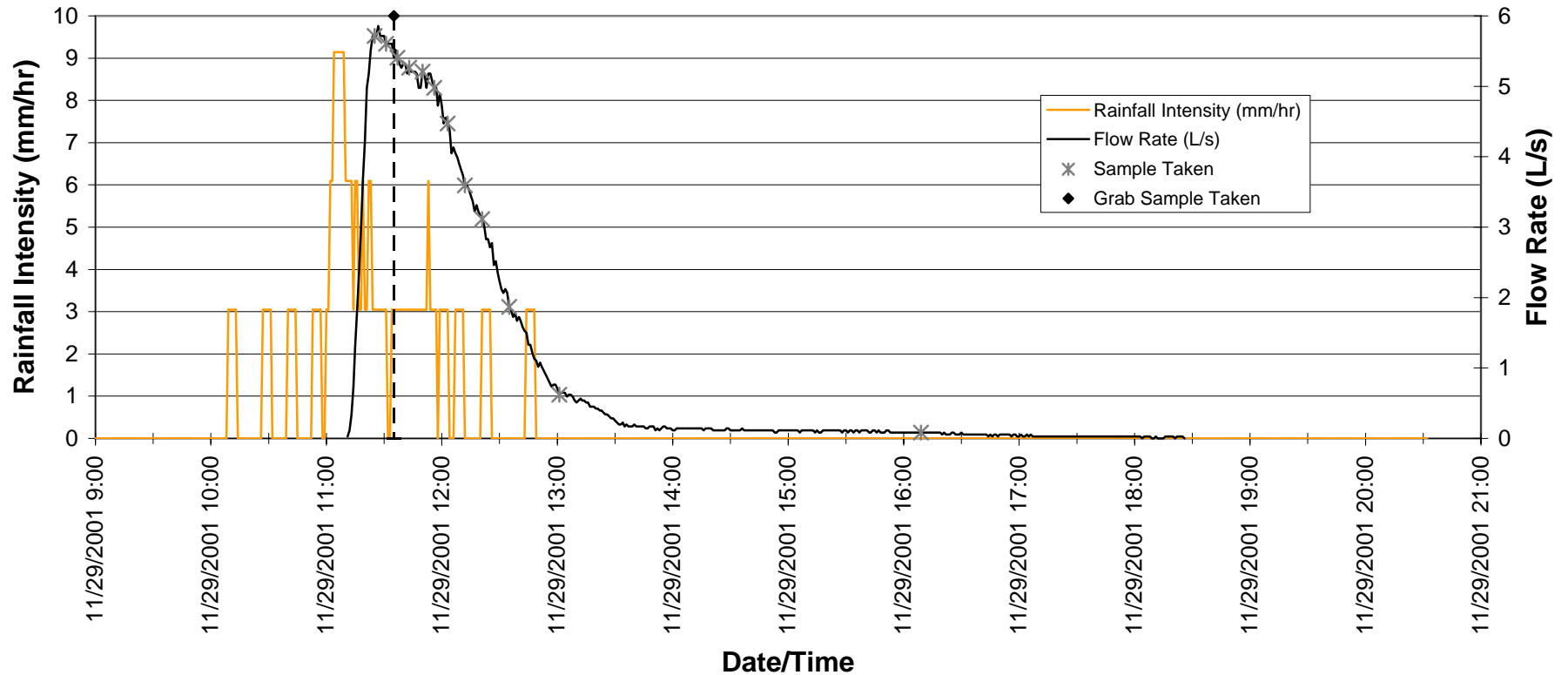
Notes:

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## Event Summary

Site: 785L (12-223)  
Event: 11/29/2001\_2001-03

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 11/29/01 10:09  
Stop Date/Time: 11/29/01 12:44  
Event Rain (mm): 6.10  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 11/29/01 11:11  
Stop Date/Time: 11/29/01 18:26  
Total Flow Volume (L): 24751  
Peak Flow (L/s): 5.86  
Observed Runoff Coefficient: 0.379

### Sample Data

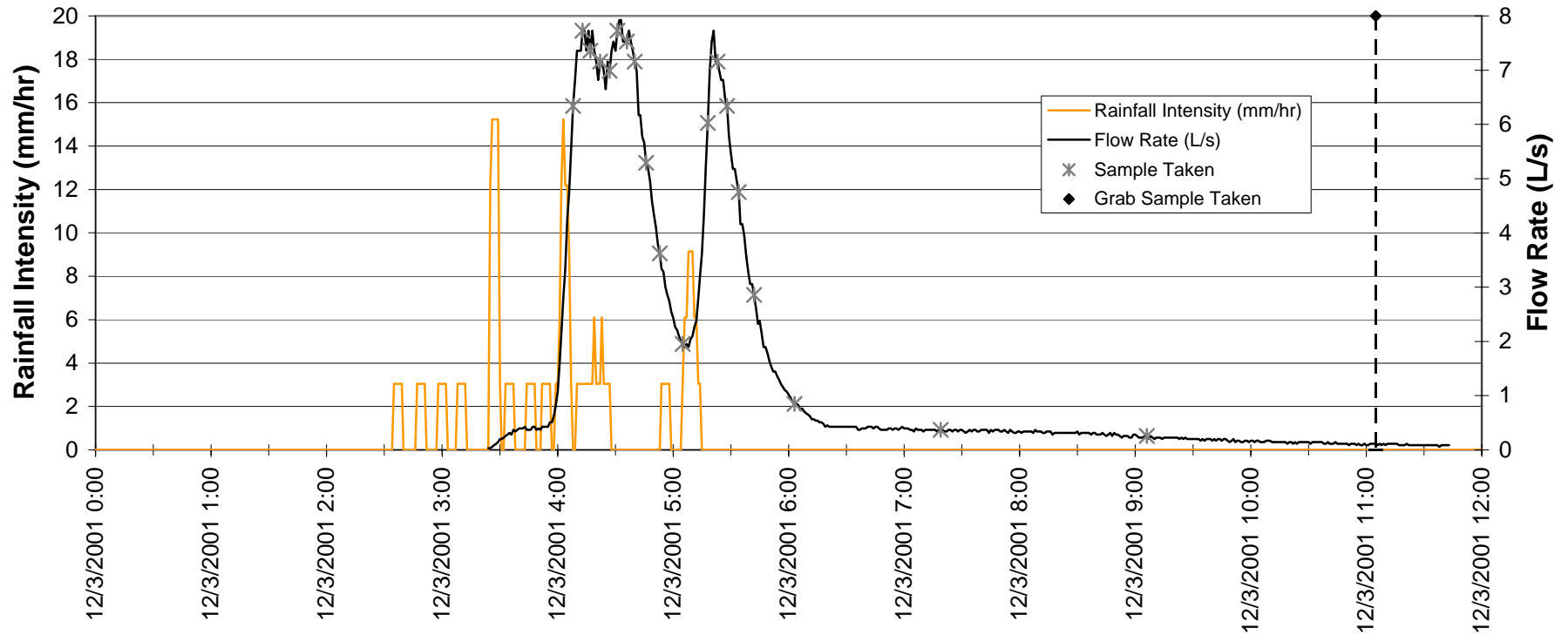
Start Date/Time: 11/29/01 11:11  
Stop Date/Time: 11/29/01 16:11  
Estimated Percent Capture: 99%  
Successful Aliquots: 12

Notes:

## Event Summary

Site: 785L (12-223)  
Event: 12/3/2002\_2001-04

Catchment Area (ha): 1.07



### Rain Data

Start Date/Time: 12/03/01 02:35  
Stop Date/Time: 12/03/01 05:10  
Event Rain (mm): 6.60  
Max Intensity (mm/hr): 15.24

### Date/Time

### Runoff Data

Start Date/Time: 12/03/01 03:24  
Stop Date/Time: 12/03/01 11:43  
Total Flow Volume (L): 40107  
Peak Flow (L/s): 7.92  
Observed Runoff Coefficient: 0.568

### Sample Data

Start Date/Time: 12/03/01 03:24  
Stop Date/Time: 12/03/01 09:08  
Estimated Percent Capture: 97%  
Successful Aliquots: 19

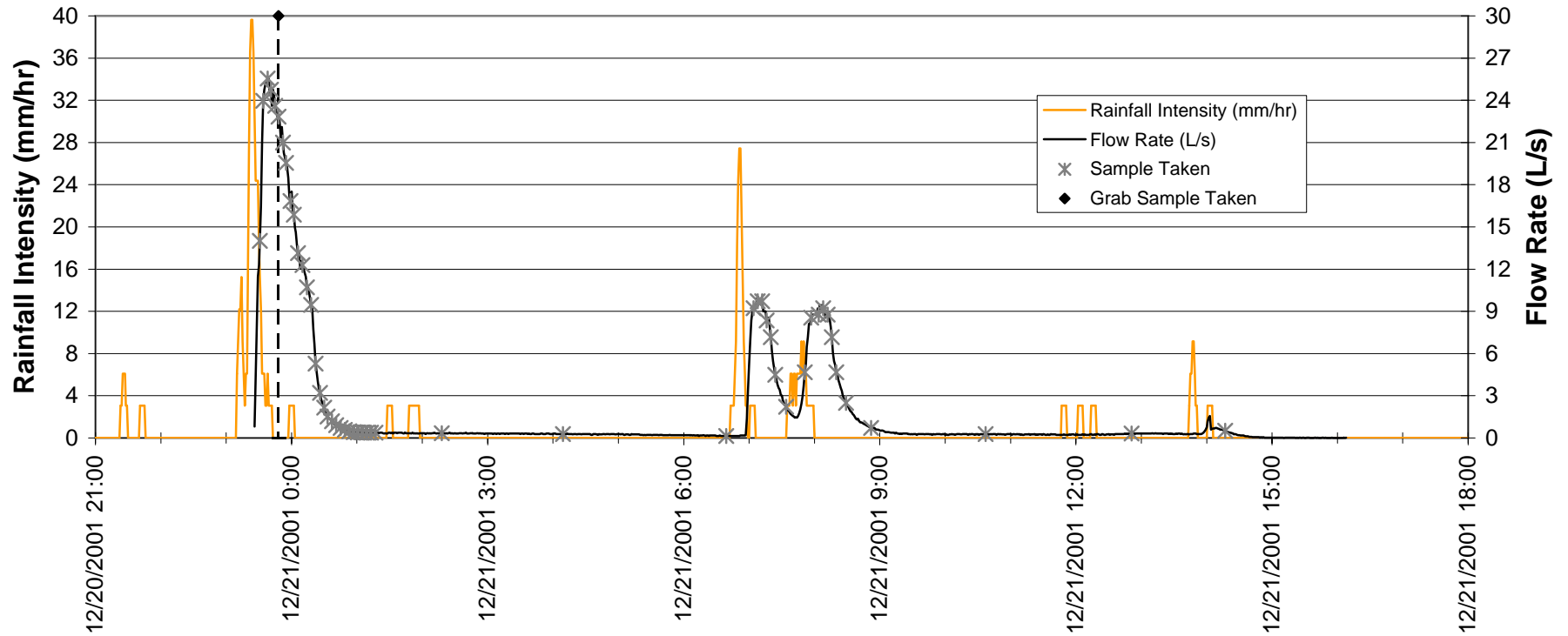
Notes:

## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.07

Event: 12/20/2001 to 12/21/2001\_2001-05



### Rain Data

Start Date/Time: 12/20/01 21:23  
Stop Date/Time: 12/21/01 14:01  
Event Rain (mm): 16.76  
Max Intensity (mm/hr): 39.62

### Date/Time

### Runoff Data

Start Date/Time: 12/20/01 23:26  
Stop Date/Time: 12/21/01 16:08  
Total Flow Volume (L): 106054  
Peak Flow (L/s): 25.55  
Observed Runoff Coefficient: 0.591

### Sample Data

Start Date/Time: 12/20/01 23:26  
Stop Date/Time: 12/21/01 14:19  
Estimated Percent Capture: 99%  
Successful Aliquots: 51

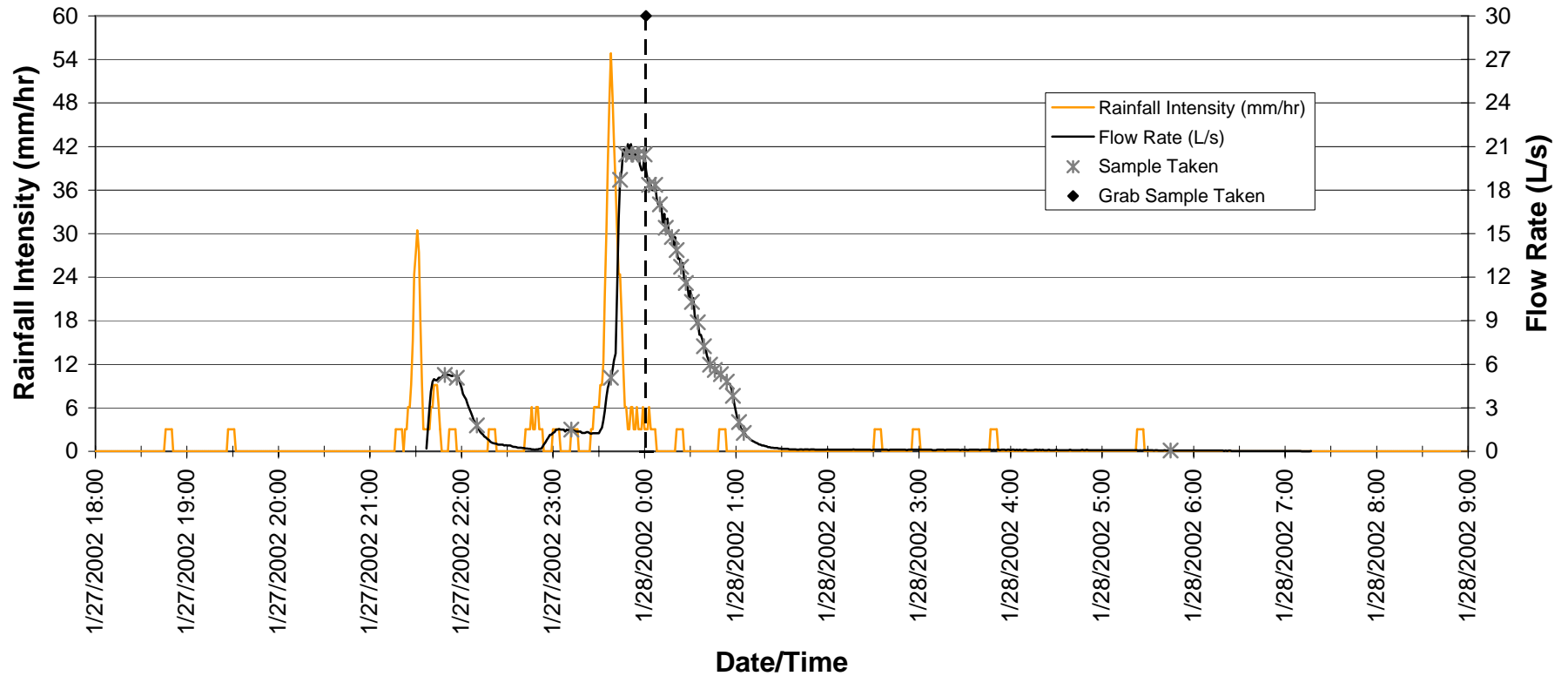
Notes:

## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.07

Event: 1/27/2002 to 1/28/2002\_2001-06



### Rain Data

Start Date/Time: 01/27/02 18:46  
 Stop Date/Time: 01/28/02 05:23  
 Event Rain (mm): 17.78  
 Max Intensity (mm/hr): 54.86

### Runoff Data

Start Date/Time: 01/27/02 21:37  
 Stop Date/Time: 01/28/02 07:17  
 Total Flow Volume (L): 78965  
 Peak Flow (L/s): 21.17  
 Observed Runoff Coefficient: 0.415

### Sample Data

Start Date/Time: 01/27/02 21:37  
 Stop Date/Time: 01/28/02 05:47  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 29

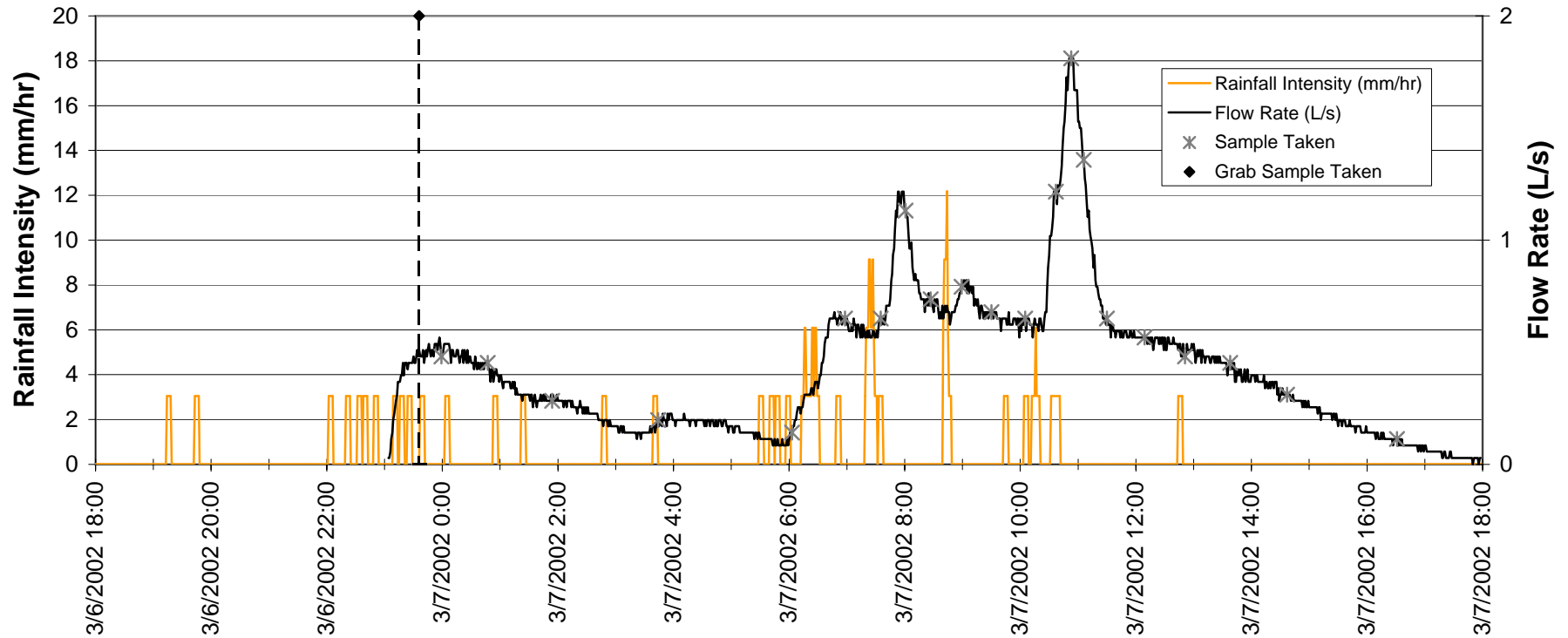
Notes:

## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.07

Event: 3/6/2002 to 3/7/2002\_2001-07



### Rain Data

Start Date/Time: 03/06/02 19:14  
Stop Date/Time: 03/07/02 12:44  
Event Rain (mm): 10.92  
Max Intensity (mm/hr): 12.19

### Date/Time

### Runoff Data

Start Date/Time: 03/06/02 23:04  
Stop Date/Time: 03/07/02 17:58  
Total Flow Volume (L): 28766  
Peak Flow (L/s): 1.81  
Observed Runoff Coefficient: 0.246

### Sample Data

Start Date/Time: 03/06/02 23:04  
Stop Date/Time: 03/07/02 16:32  
Estimated Percent Capture: 99%  
Successful Aliquots: 21

Notes:

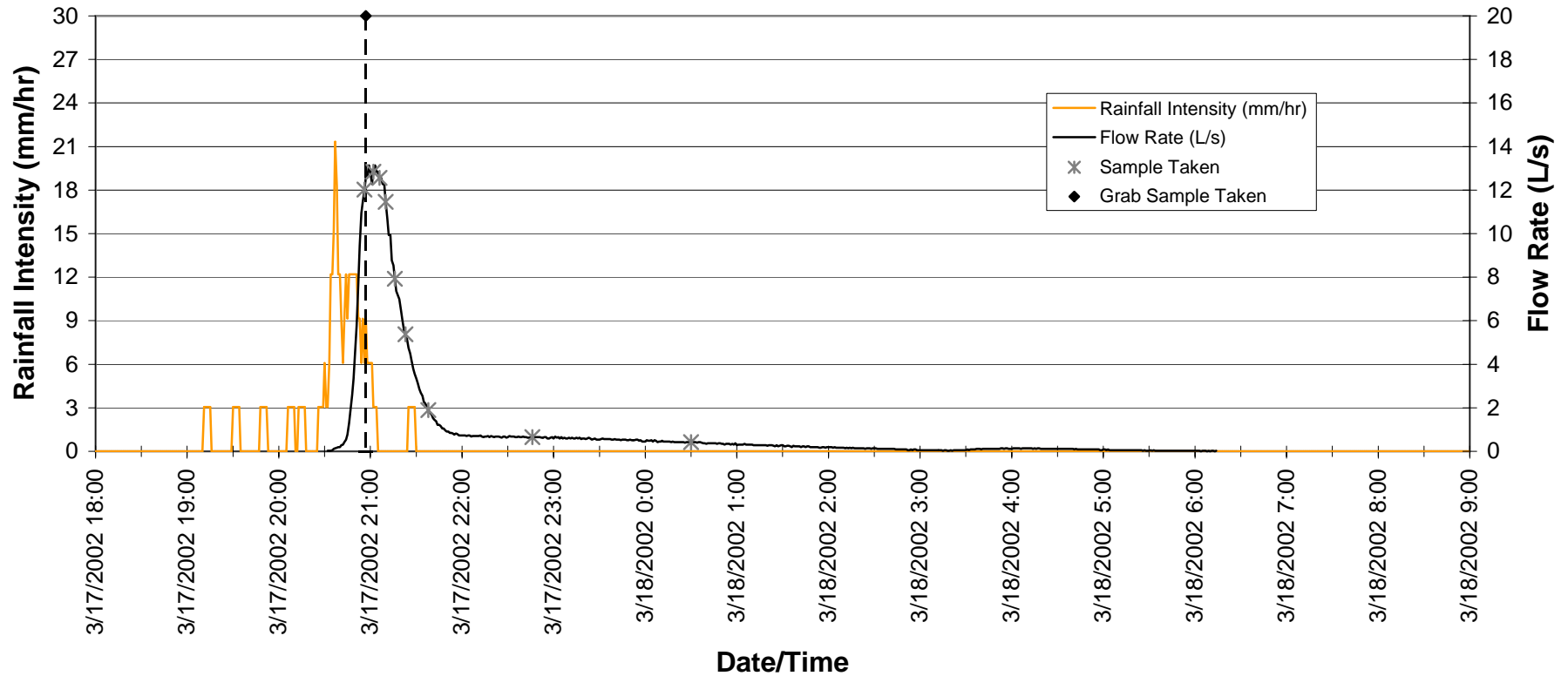
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## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.07

Event: 3/17/02 to 3/18/02\_2001-08



### Rain Data

Start Date/Time: 03/17/02 19:11  
Stop Date/Time: 03/17/02 21:25  
Event Rain (mm): 7.11  
Max Intensity (mm/hr): 21.34

### Runoff Data

Start Date/Time: 03/17/02 20:32  
Stop Date/Time: 03/18/02 06:14  
Total Flow Volume (L): 33513  
Peak Flow (L/s): 13.13  
Observed Runoff Coefficient: 0.440

### Sample Data

Start Date/Time: 03/17/02 20:32  
Stop Date/Time: 03/18/02 00:31  
Estimated Percent Capture: 92%  
Successful Aliquots: 9

Notes:

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## **HYDROGRAPHS 2002-2003**

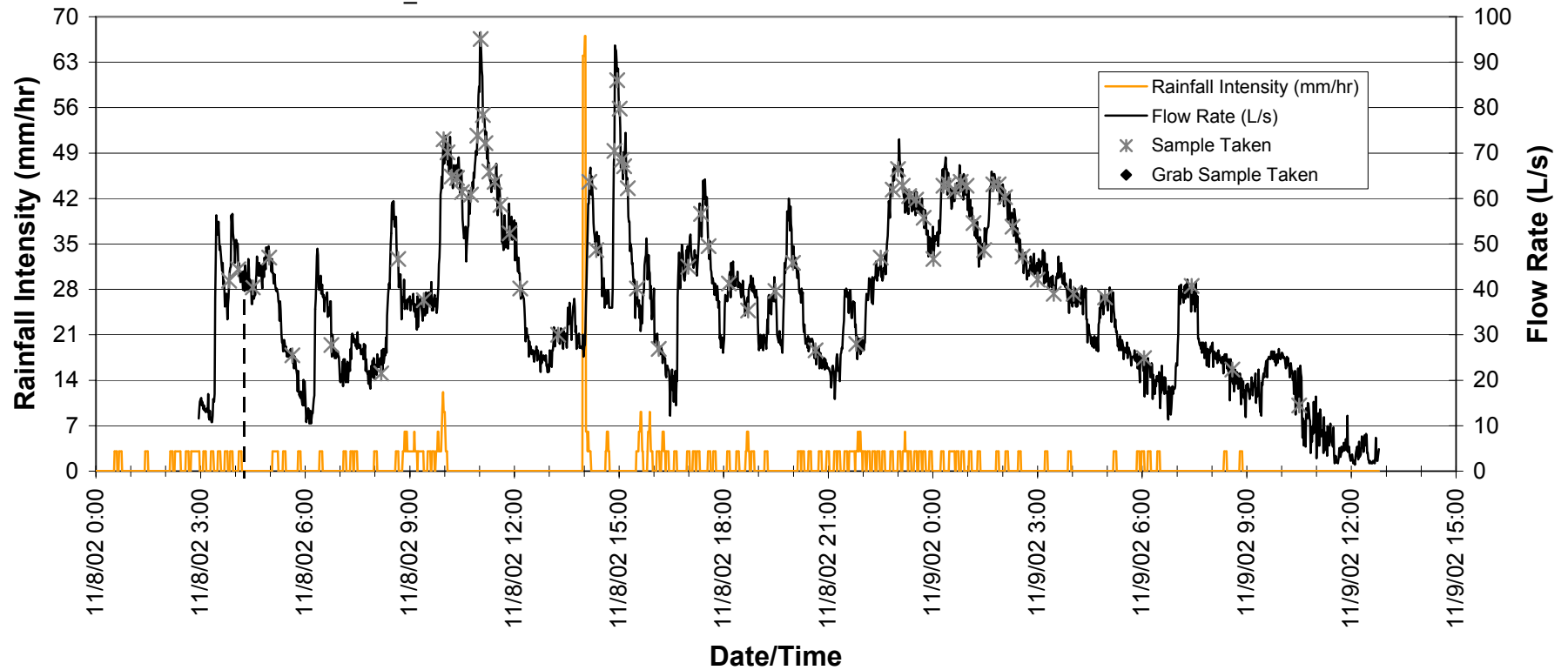
---

## Event Summary

Site: 506R (12-210)

Catchment Area (ha): 2.91

Event: 11/08/02 to 11/09/02\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:32  
 Stop Date/Time: 11/09/02 08:48  
 Event Rain (mm): 35.05  
 Max Intensity (mm/hr): 67.06

### Runoff Data

Start Date/Time: 11/08/02 02:57  
 Stop Date/Time: 11/09/02 13:09  
 Total Flow Volume (L): 4470393  
 Peak Flow (L/s): 96.50  
 Obs. Fraction Runoff/Rain Volume: 4.383

### Sample Data

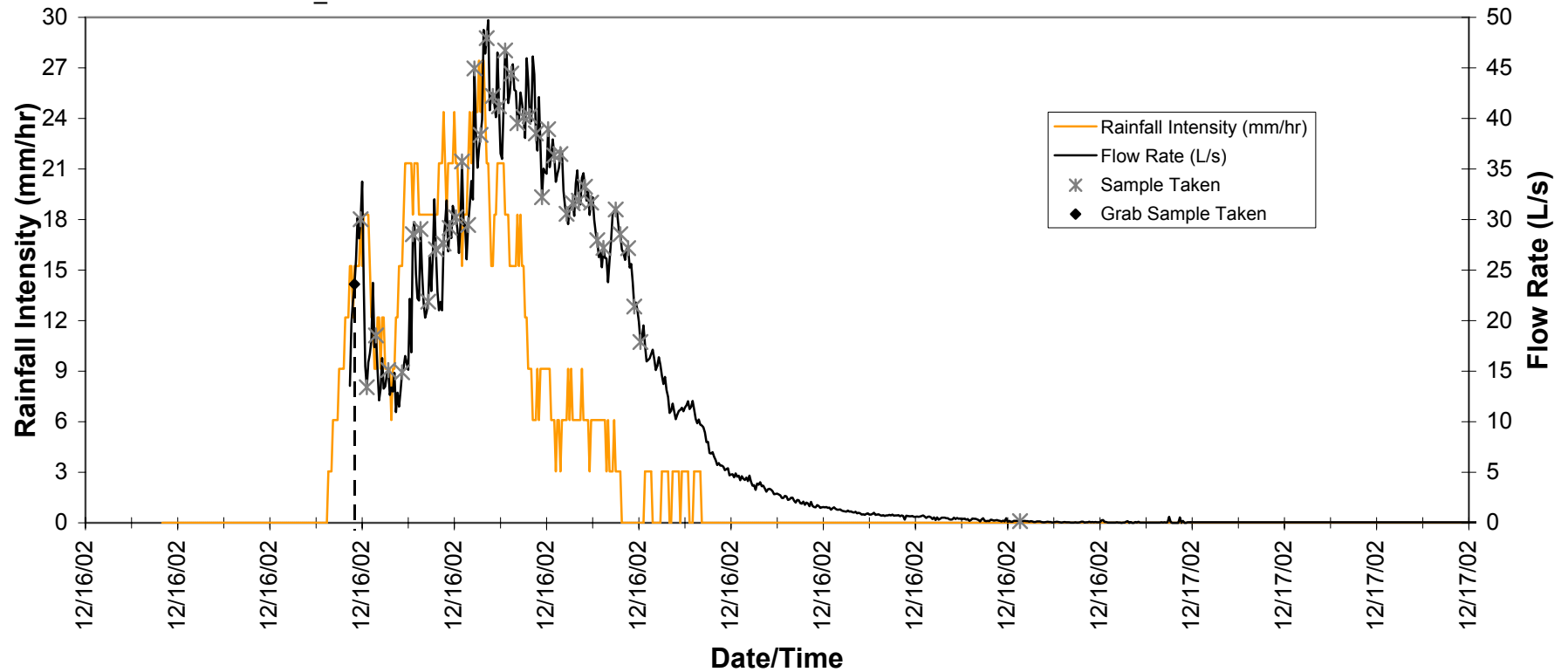
Start Date/Time: 11/08/02 02:57  
 Stop Date/Time: 11/09/02 10:32  
 Estimated Percent Capture: 98%  
 Successful Aliquots: 72

Notes: The sampler was shut down prior to 6 hours of dry weather. Pacing for site was underestimated due to forecast and bottles were spent prior to six full hours of dry weather. The sample collected is representative of the quality of runoff from the subject rain event.

## Event Summary

Site: 506R (12-210)  
Event: 12/16/2002\_2002-02

Catchment Area (ha): 2.91



### Rain Data

Start Date/Time: 12/16/02 14:38  
Stop Date/Time: 12/16/02 18:36  
Event Rain (mm): 43.69  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 14:52  
Stop Date/Time: 12/17/02 00:56  
Total Flow Volume (L): 394417  
Peak Flow (L/s): 49.72  
Obs. Fraction Runoff/Rain Volume: 0.310

### Sample Data

Start Date/Time: 12/16/02 14:52  
Stop Date/Time: 12/16/02 22:11  
Estimated Percent Capture: 83%  
Avg. Successful Aliquots/Bottle: 41  
Max. Successful Aliquots (Bottle#1): 42

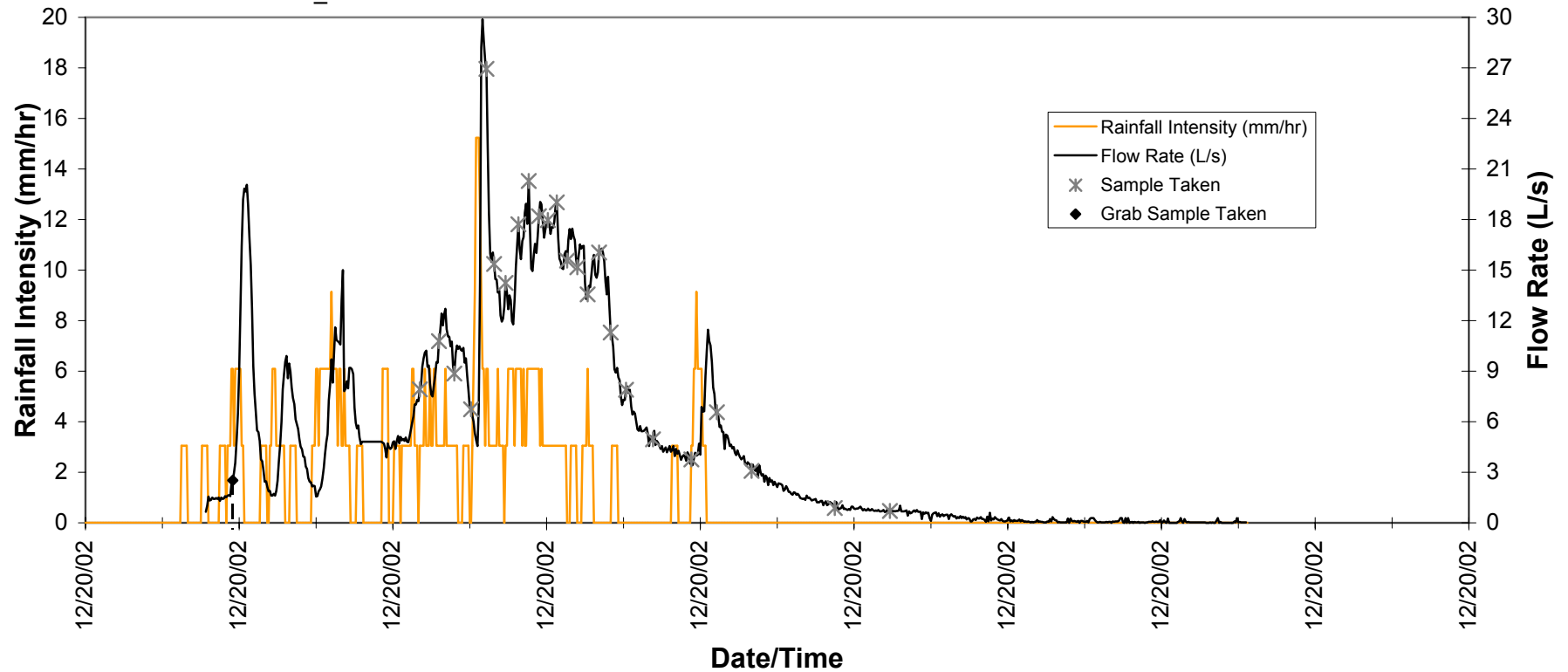
Notes:

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## Event Summary

Site: 506R (12-210)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 2.91



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:00  
Event Rain (mm): 17.78  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:34  
Stop Date/Time: 12/20/02 15:06  
Total Flow Volume (L): 233609  
Peak Flow (L/s): 29.88  
Obs. Fraction Runoff/Rain Volume: 0.452

### Sample Data

Start Date/Time: 12/20/02 01:34  
Stop Date/Time: 12/20/02 10:30  
Estimated Percent Capture: 78%  
Successful Aliquots: 24

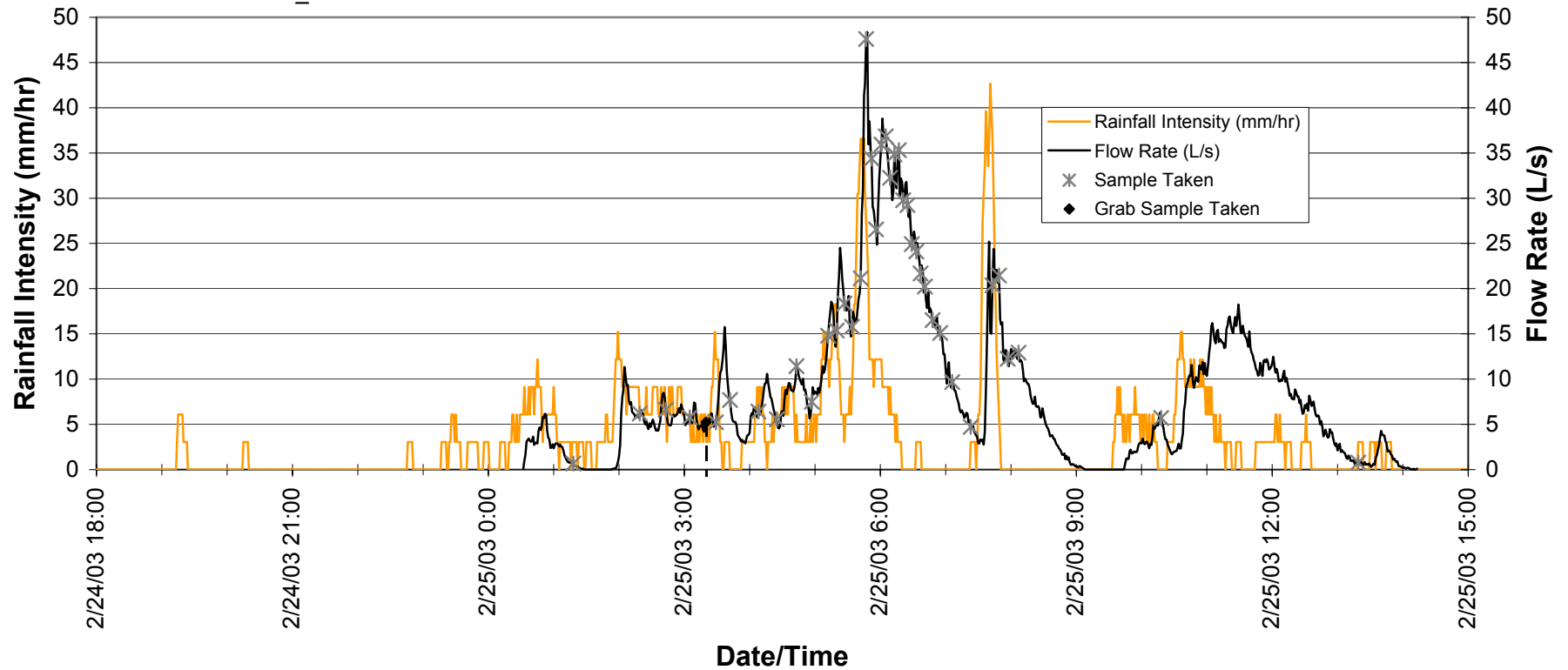
Notes:

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## Event Summary

Site: 506R (12-210)  
Event: 2/25/2002\_2002-04

Catchment Area (ha): 2.91



### Rain Data

Start Date/Time: 02/24/03 19:14  
Stop Date/Time: 02/25/03 13:45  
Event Rain (mm): 68.58  
Max Intensity (mm/hr): 42.67

### Runoff Data

Start Date/Time: 02/25/03 00:32  
Stop Date/Time: 02/25/03 14:13  
Total Flow Volume (L): 411273  
Peak Flow (L/s): 48.36  
Obs. Fraction Runoff/Rain Volume: 0.206

### Sample Data

Start Date/Time: 02/25/03 00:32  
Stop Date/Time: 02/25/03 13:21  
Estimated Percent Capture: 87%  
Avg. Successful Aliquots/Bottle: 38  
Max. Successful Aliquots (Bottle#1): 39

Notes:

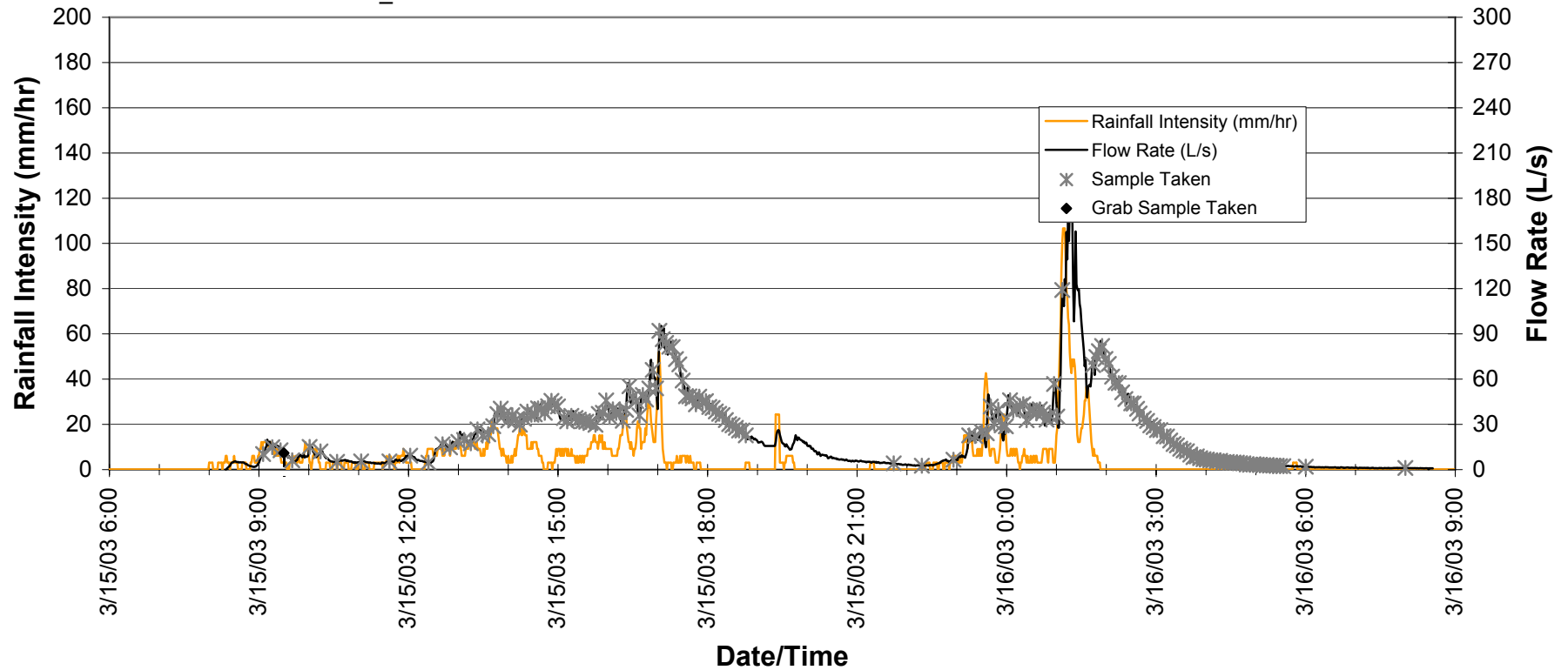
--

## Event Summary

Site: 506R (12-210)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 2.91



### Rain Data

Start Date/Time: 03/15/03 08:00  
Stop Date/Time: 03/16/03 05:45  
Event Rain (mm): 125.98  
Max Intensity (mm/hr): 106.68

### Runoff Data

Start Date/Time: 03/15/03 08:20  
Stop Date/Time: 03/16/03 08:33  
Total Flow Volume (L): 1945929  
Peak Flow (L/s): 239.05  
Obs. Fraction Runoff/Rain Volume: 0.531

### Sample Data

Start Date/Time: 03/15/03 08:20  
Stop Date/Time: 03/16/03 08:02  
Estimated Percent Capture: 96%  
Successful Aliquots: 180

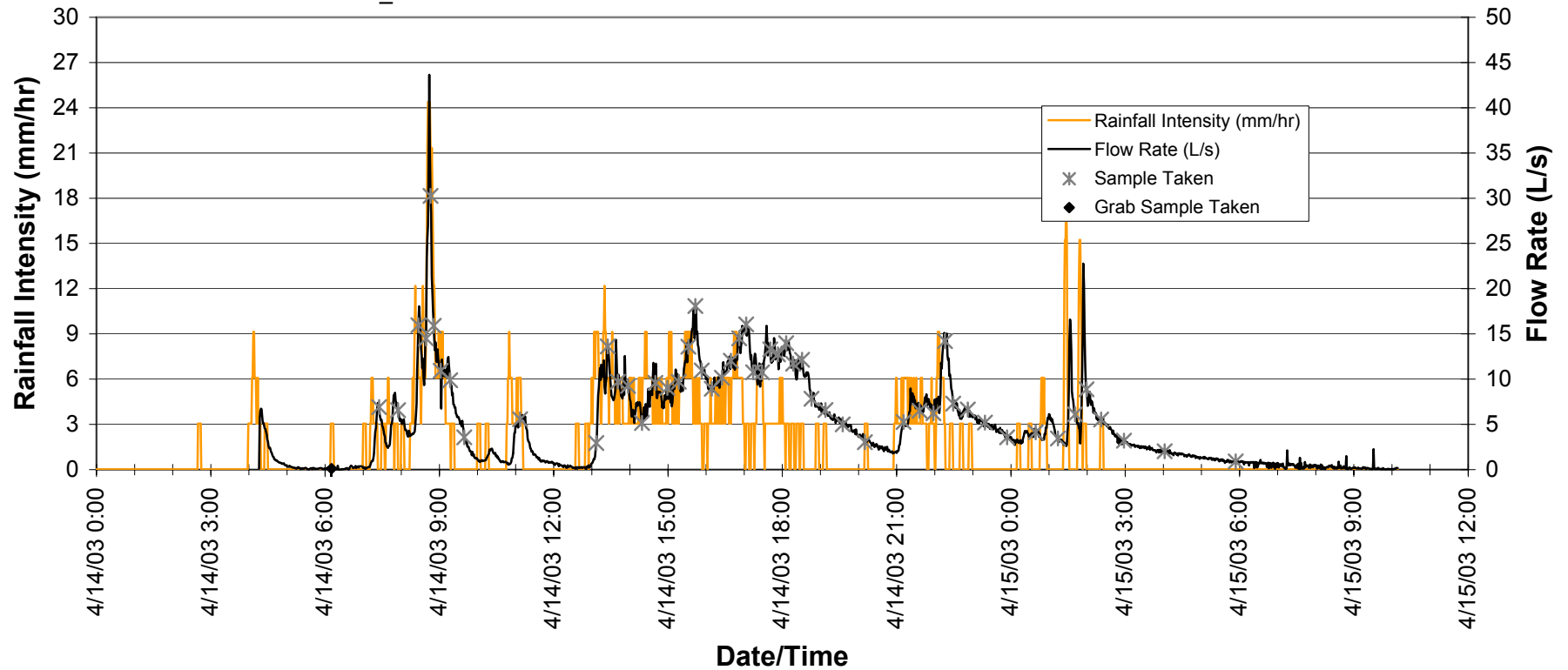
Notes:

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## Event Summary

Site: 506R (12-210)  
Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 2.91



### Rain Data

Start Date/Time: 04/14/03 02:40  
Stop Date/Time: 04/15/03 02:21  
Event Rain (mm): 54.86  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 04:16  
Stop Date/Time: 04/15/03 10:09  
Total Flow Volume (L): 505424  
Peak Flow (L/s): 43.64  
Obs. Fraction Runoff/Rain Volume: 0.317

### Sample Data

Start Date/Time: 04/14/03 04:16  
Stop Date/Time: 04/15/03 05:56  
Estimated Percent Capture: 99%  
Successful Aliquots: 53

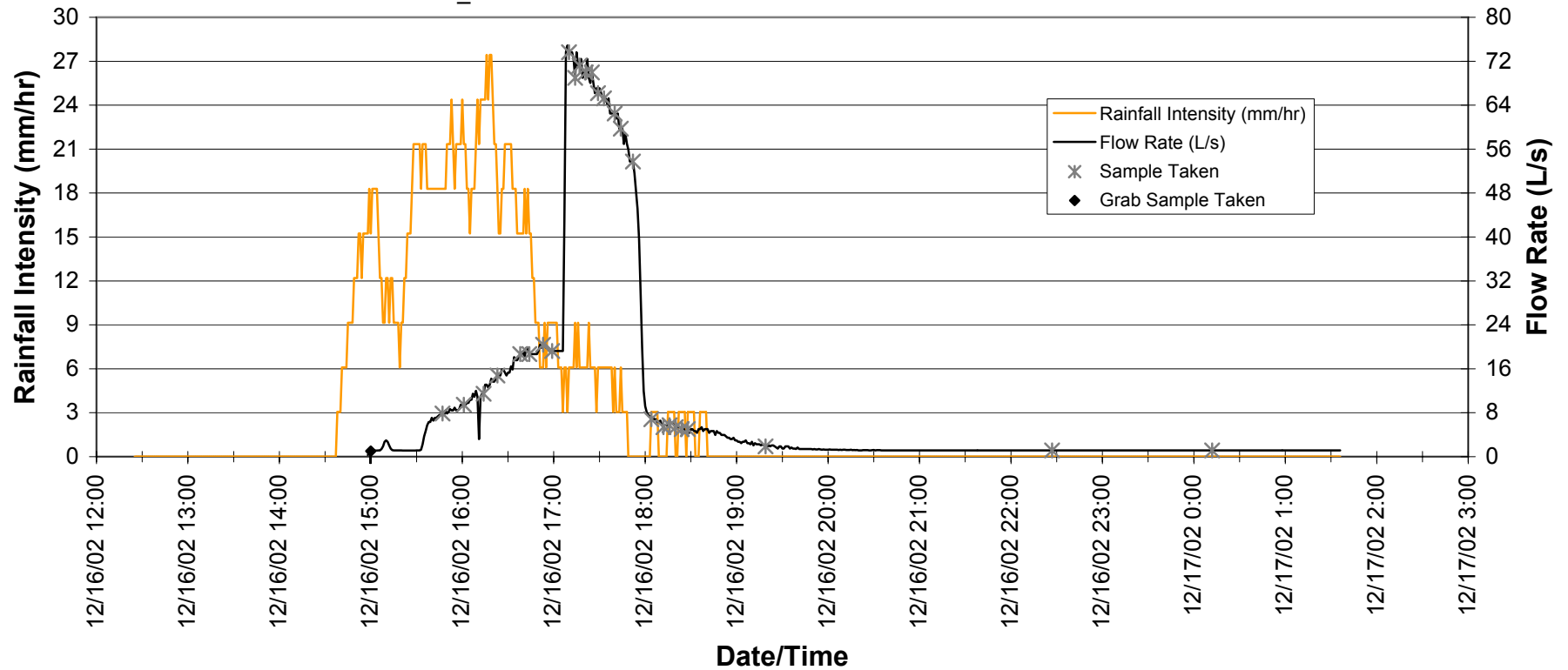
Notes:

## Event Summary

Site: 506R (12-211)

Event: 12/16/2002 to 12/17/2002\_2002-02

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 12/16/02 14:38  
Stop Date/Time: 12/16/02 18:36  
Event Rain (mm): 43.69  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 14:58  
Stop Date/Time: 12/17/02 01:36  
Total Flow Volume (L): 320663  
Peak Flow (L/s): 74.88  
Obs. Fraction Runoff/Rain Volume: 0.244

### Sample Data

Start Date/Time: 12/16/02 14:58  
Stop Date/Time: 12/17/02 00:14  
Estimated Percent Capture: 91%  
Avg. Successful Aliquots/Bottle: 34  
Max. Successful Aliquots (Bottle#2): 36

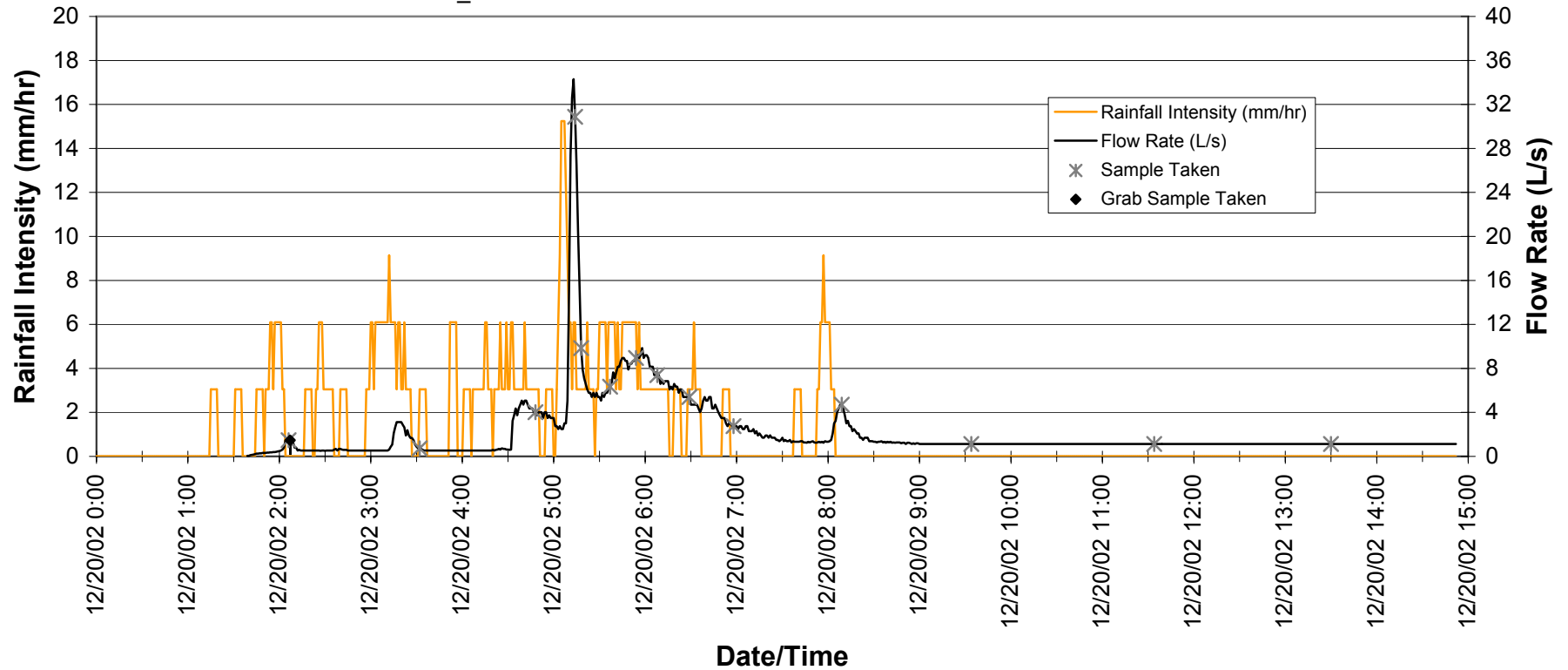
Notes:

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 3.01

Event: 12/19/2002 to 12/20/2002\_2002-03



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:00  
Event Rain (mm): 17.78  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:39  
Stop Date/Time: 12/20/02 14:52  
Total Flow Volume (L): 103255  
Peak Flow (L/s): 34.30  
Obs. Fraction Runoff/Rain Volume: 0.193

### Sample Data

Start Date/Time: 12/20/02 01:39  
Stop Date/Time: 12/20/02 13:32  
Estimated Percent Capture: 95%  
Successful Aliquots: 14

Notes:

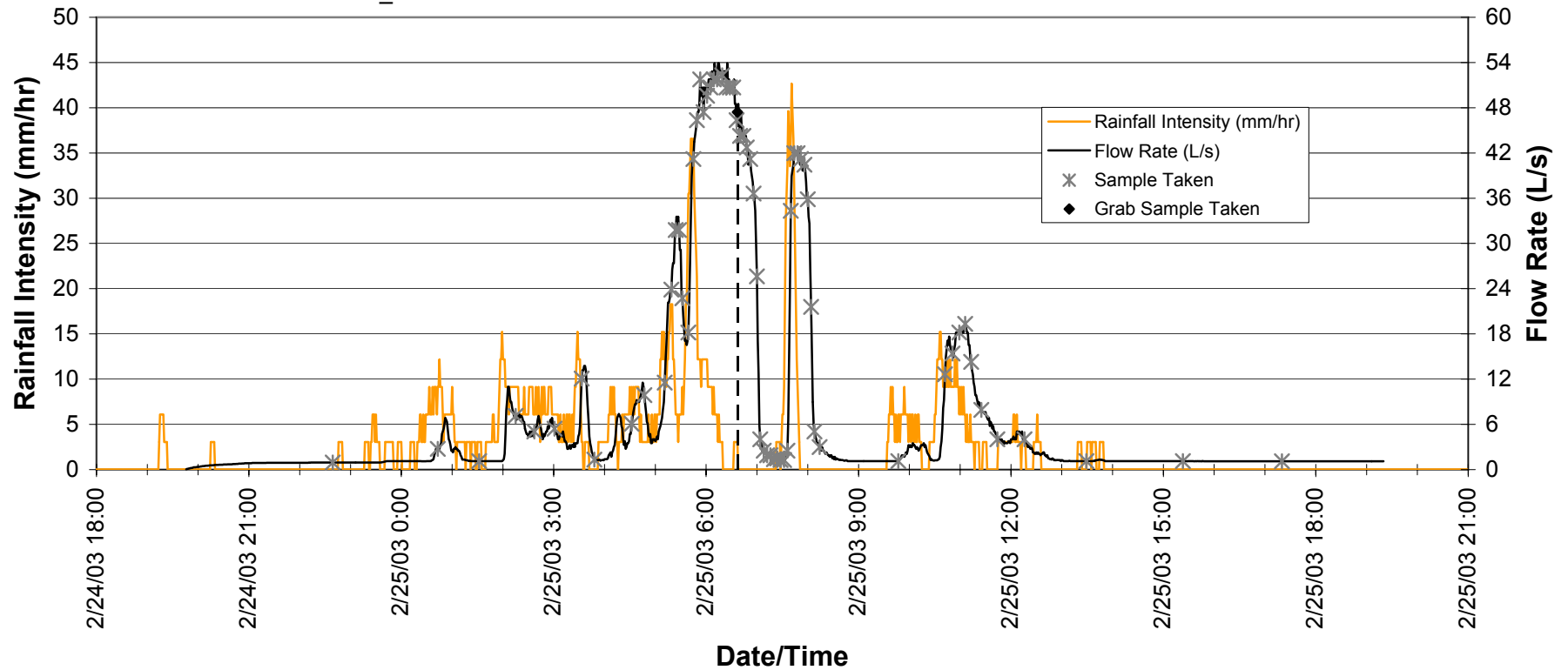
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## Event Summary

Site: 506R (12-211)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 02/24/03 19:14  
Stop Date/Time: 02/25/03 13:45  
Event Rain (mm): 68.58  
Max Intensity (mm/hr): 42.67

### Runoff Data

Start Date/Time: 02/24/03 19:46  
Stop Date/Time: 02/25/03 19:20  
Total Flow Volume (L): 525285  
Peak Flow (L/s): 53.91  
Obs. Fraction Runoff/Rain Volume: 0.254

### Sample Data

Start Date/Time: 02/24/03 19:46  
Stop Date/Time: 02/25/03 17:22  
Estimated Percent Capture: 97%  
Successful Aliquots: 65

Notes:

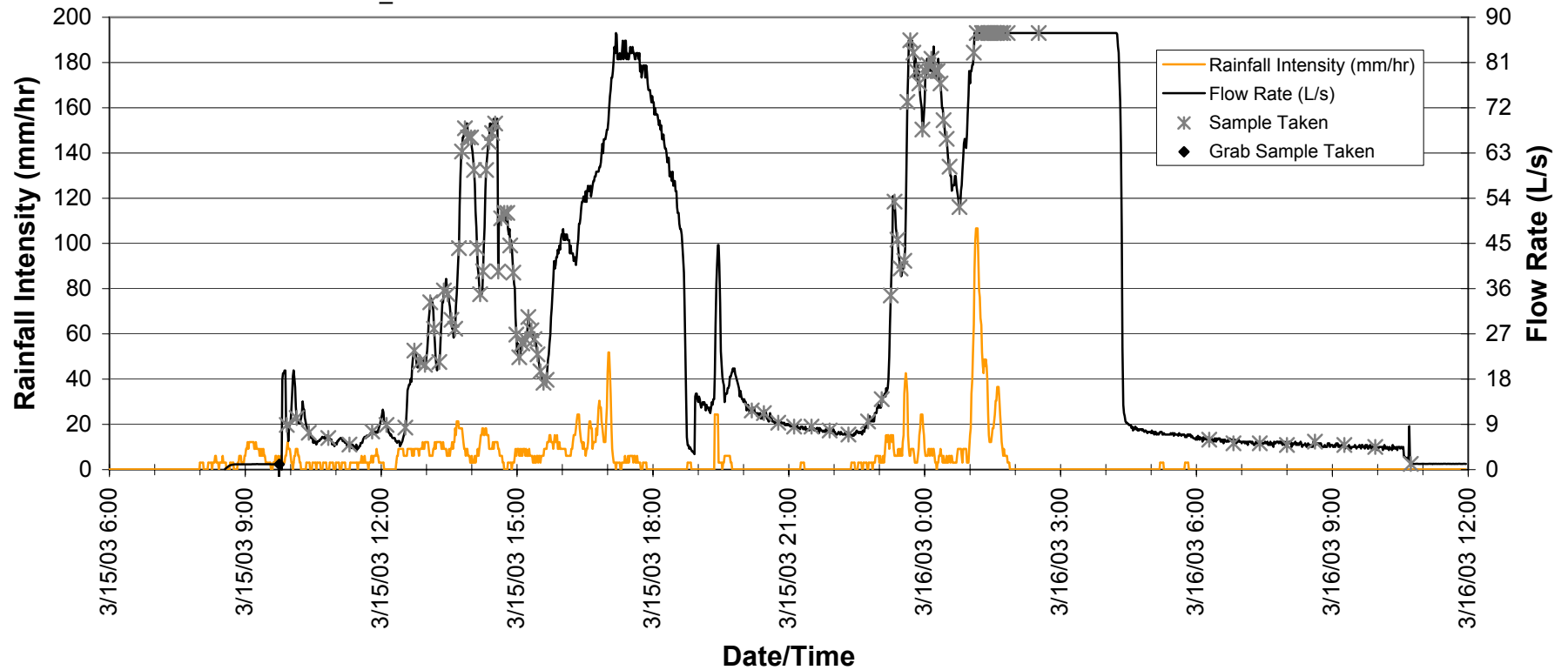
--

## Event Summary

Site: 506R (12-211)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 03/15/03 08:00  
Stop Date/Time: 03/16/03 05:45  
Event Rain (mm): 125.98  
Max Intensity (mm/hr): 106.68

### Runoff Data

Start Date/Time: 03/15/03 08:33  
Stop Date/Time: 03/16/03 11:57  
Total Flow Volume (L): 2954730  
Peak Flow (L/s): 86.88  
Obs. Fraction Runoff/Rain Volume: 0.779

### Sample Data

Start Date/Time: 03/15/03 08:33  
Stop Date/Time: 03/16/03 10:46  
Estimated Percent Capture: 84%  
Avg. Successful Aliquots/Bottle: 210  
Max. Successful Aliquots (Bottle#2): 248

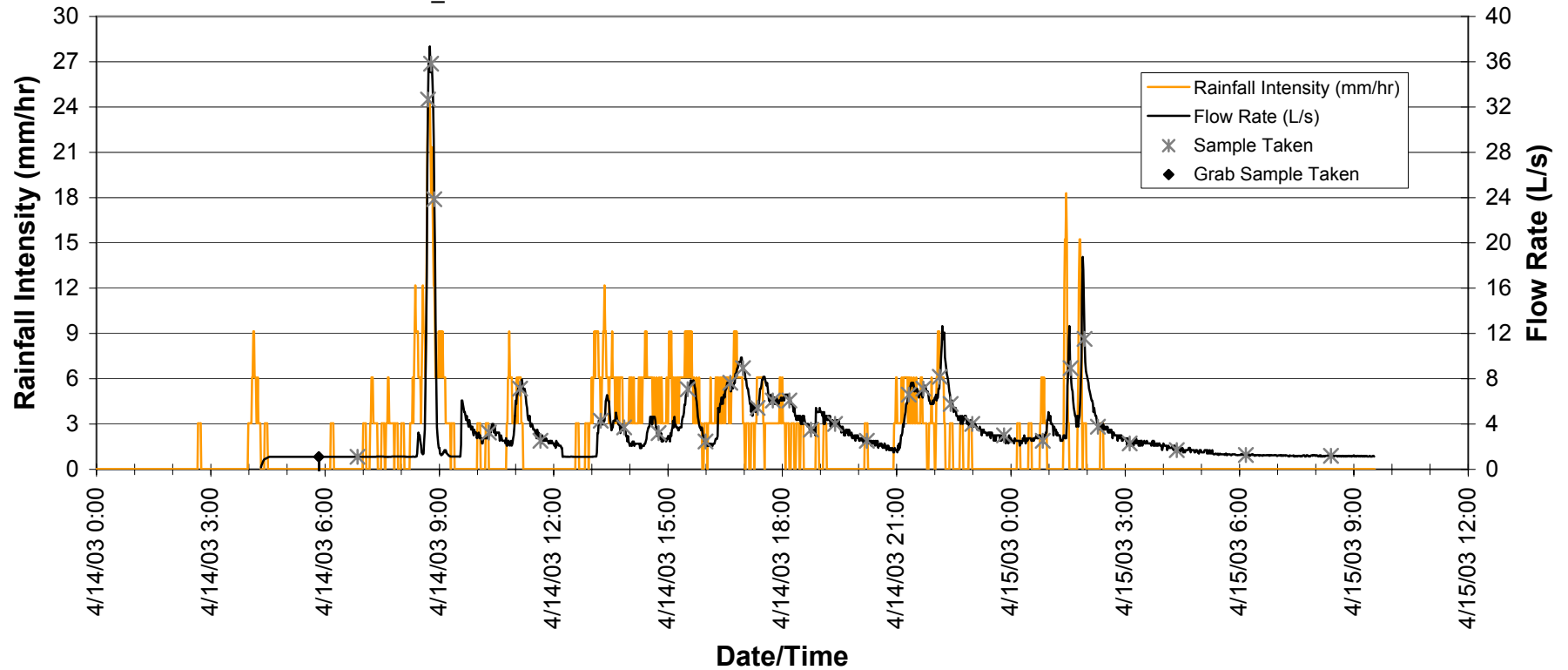
Notes:

## Event Summary

Site: 506R (12-211)

Catchment Area (ha): 3.01

Event: 4/14/2003 to 4/15/2003\_2002-06



### Rain Data

Start Date/Time: 04/14/03 02:40  
Stop Date/Time: 04/15/03 02:21  
Event Rain (mm): 54.86  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 04:19  
Stop Date/Time: 04/15/03 09:32  
Total Flow Volume (L): 346613  
Peak Flow (L/s): 37.36  
Obs. Fraction Runoff/Rain Volume: 0.210

### Sample Data

Start Date/Time: 04/14/03 04:19  
Stop Date/Time: 04/15/03 08:26  
Estimated Percent Capture: 98%  
Successful Aliquots: 35

Notes:

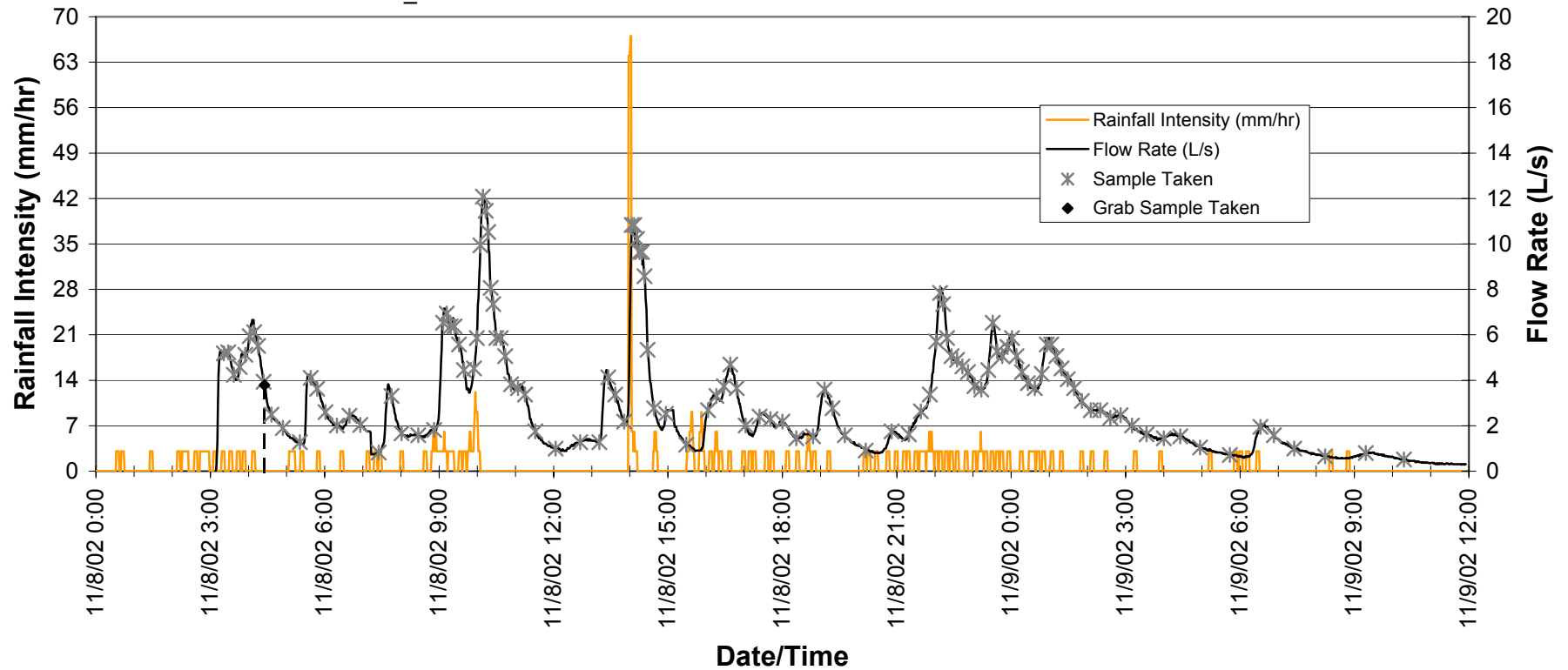
--

## Event Summary

Site: 506R (12-212)

Catchment Area (ha): 3.01

Event: 11/08/02 to 11/09/02\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:32  
 Stop Date/Time: 11/09/02 08:48  
 Event Rain (mm): 35.05  
 Max Intensity (mm/hr): 67.06

### Runoff Data

Start Date/Time: 11/08/02 03:09  
 Stop Date/Time: 11/09/02 11:55  
 Total Flow Volume (L): 303151  
 Peak Flow (L/s): 12.08  
 Obs. Fraction Runoff/Rain Volume: 0.287

### Sample Data

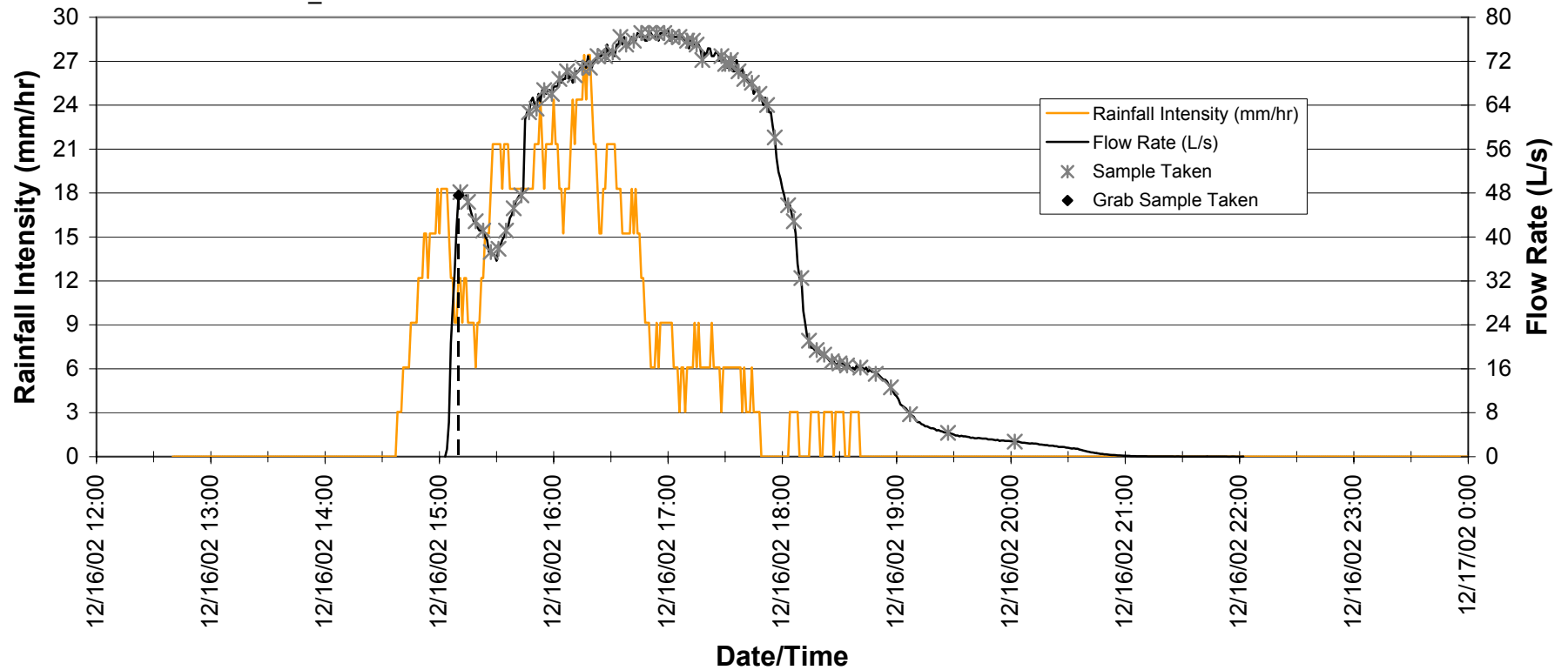
Start Date/Time: 11/08/02 03:09  
 Stop Date/Time: 11/09/02 10:20  
 Estimated Percent Capture: 99%  
 Successful Aliquots: 123

Notes: The sampler was shut down prior to 6 hours of dry weather. Pacing for site was underestimated due to forecast and bottles were spent prior to six full hours of dry weather. The sample collected is representative of the quality of runoff from the subject rain event.

## Event Summary

Site: 506R (12-212)  
Event: 12/16/2002\_2002-02

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 12/16/02 14:38  
Stop Date/Time: 12/16/02 18:36  
Event Rain (mm): 43.69  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 15:03  
Stop Date/Time: 12/16/02 22:02  
Total Flow Volume (L): 773706  
Peak Flow (L/s): 77.88  
Obs. Fraction Runoff/Rain Volume: 0.588

### Sample Data

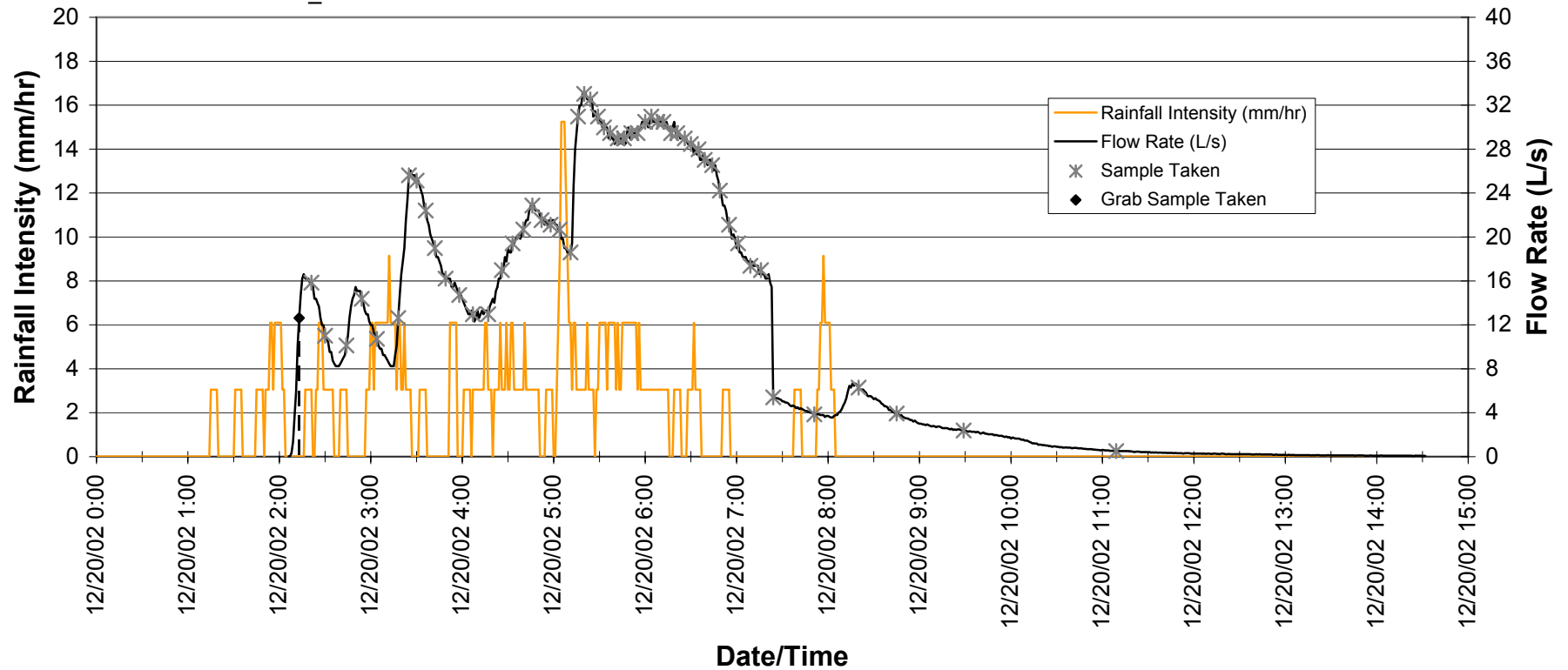
Start Date/Time: 12/16/02 15:03  
Stop Date/Time: 12/16/02 20:04  
Estimated Percent Capture: 93%  
Avg. Successful Aliquots/Bottle: 55  
Max. Successful Aliquots (Bottle#1): 59

Notes:

## Event Summary

Site: 506R (12-212)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:00  
Event Rain (mm): 17.78  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 02:06  
Stop Date/Time: 12/20/02 14:32  
Total Flow Volume (L): 425966  
Peak Flow (L/s): 33.03  
Obs. Fraction Runoff/Rain Volume: 0.796

### Sample Data

Start Date/Time: 12/20/02 02:06  
Stop Date/Time: 12/20/02 11:11  
Estimated Percent Capture: 99%  
Successful Aliquots: 54

Notes:

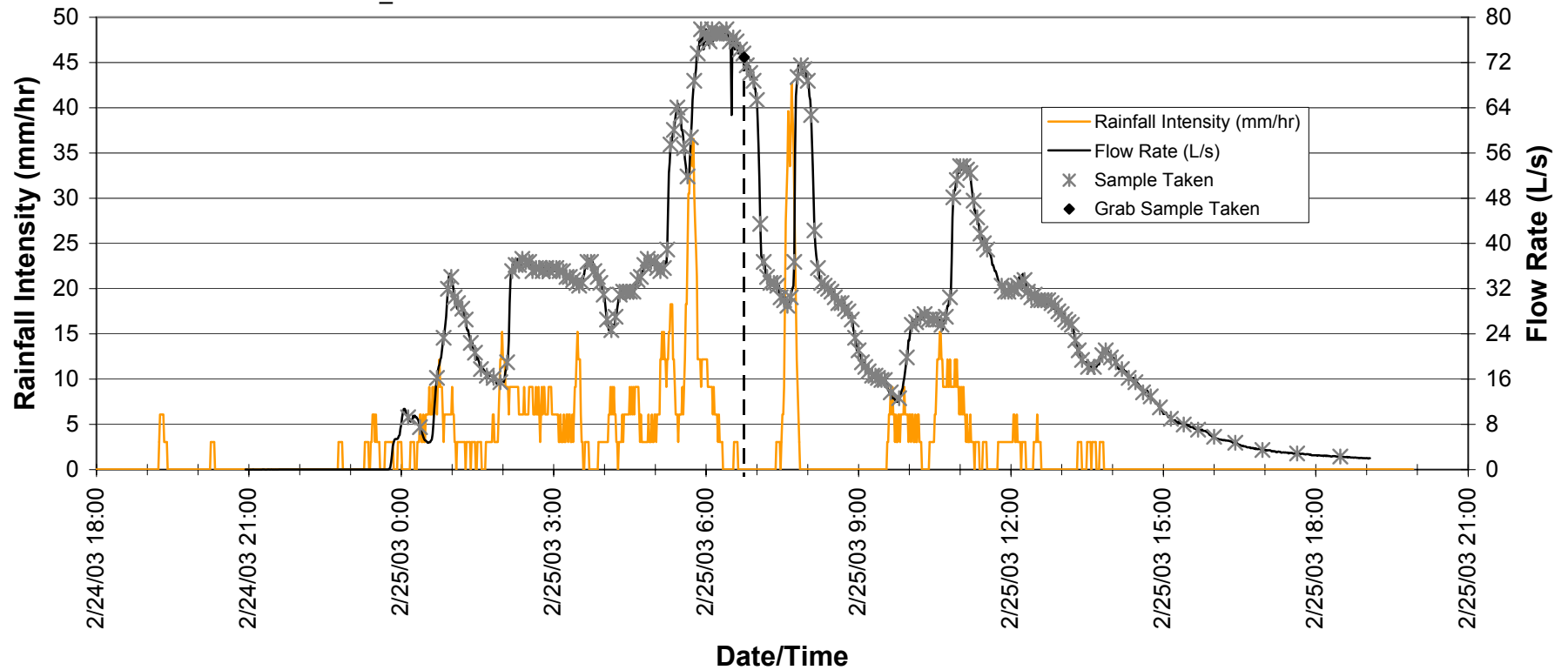
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## Event Summary

Site: 506R (12-212)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 02/24/03 19:14  
Stop Date/Time: 02/25/03 13:45  
Event Rain (mm): 68.58  
Max Intensity (mm/hr): 42.67

### Runoff Data

Start Date/Time: 02/24/03 20:56  
Stop Date/Time: 02/25/03 19:04  
Total Flow Volume (L): 1862064  
Peak Flow (L/s): 77.88  
Obs. Fraction Runoff/Rain Volume: 0.902

### Sample Data

Start Date/Time: 02/24/03 20:56  
Stop Date/Time: 02/25/03 18:31  
Estimated Percent Capture: 97%  
Avg. Successful Aliquots/Bottle: 196  
Max. Successful Aliquots (Bottle#1): 198

Notes:

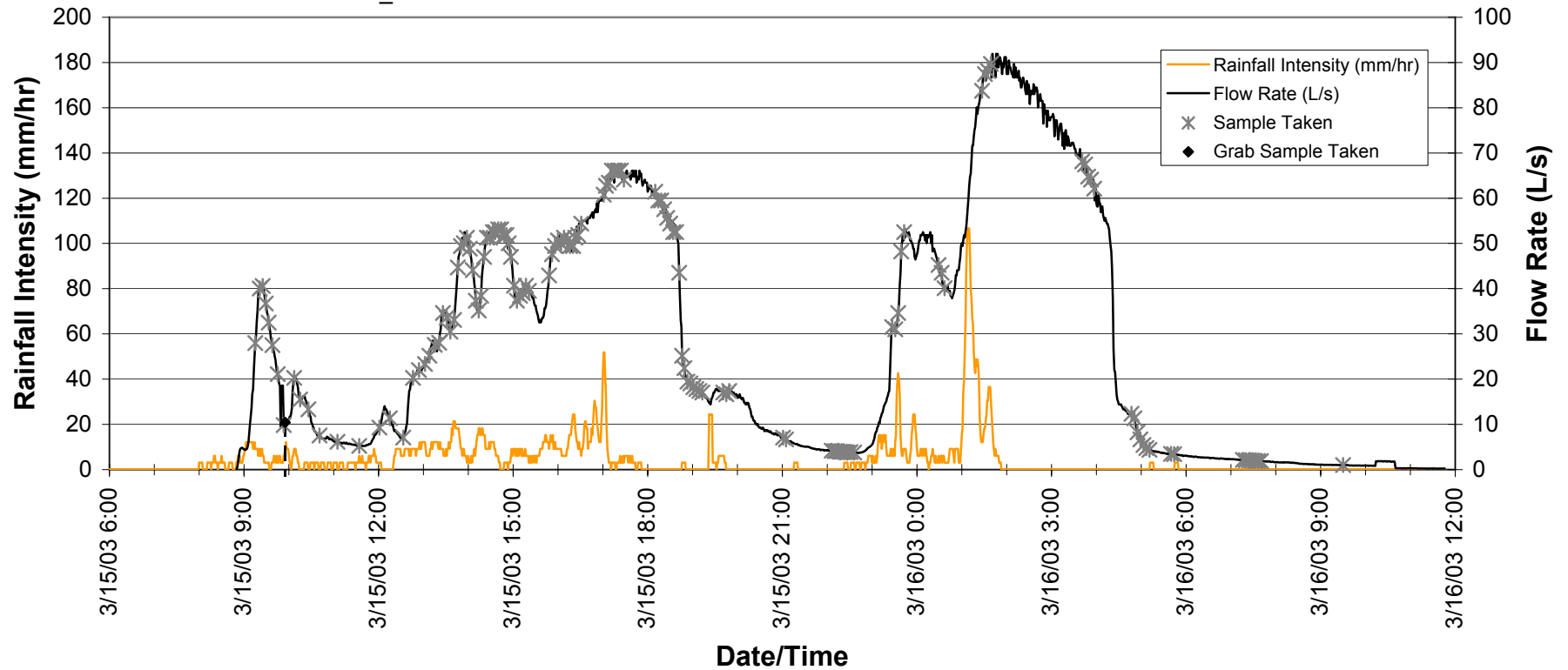
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## Event Summary

Site: 506R (12-212)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 3.01



### Rain Data

Start Date/Time: 03/15/03 08:00  
Stop Date/Time: 03/16/03 05:45  
Event Rain (mm): 125.98  
Max Intensity (mm/hr): 106.68

### Runoff Data

Start Date/Time: 03/15/03 08:50  
Stop Date/Time: 03/16/03 11:46  
Total Flow Volume (L): 2627588  
Peak Flow (L/s): 91.95  
Obs. Fraction Runoff/Rain Volume: 0.693

### Sample Data

Start Date/Time: 03/15/03 08:50  
Stop Date/Time: 03/16/03 09:32  
Estimated Percent Capture: 79%  
Avg. Successful Aliquots/Bottle: 143  
Max. Successful Aliquots (Bottle#4): 147

Notes:

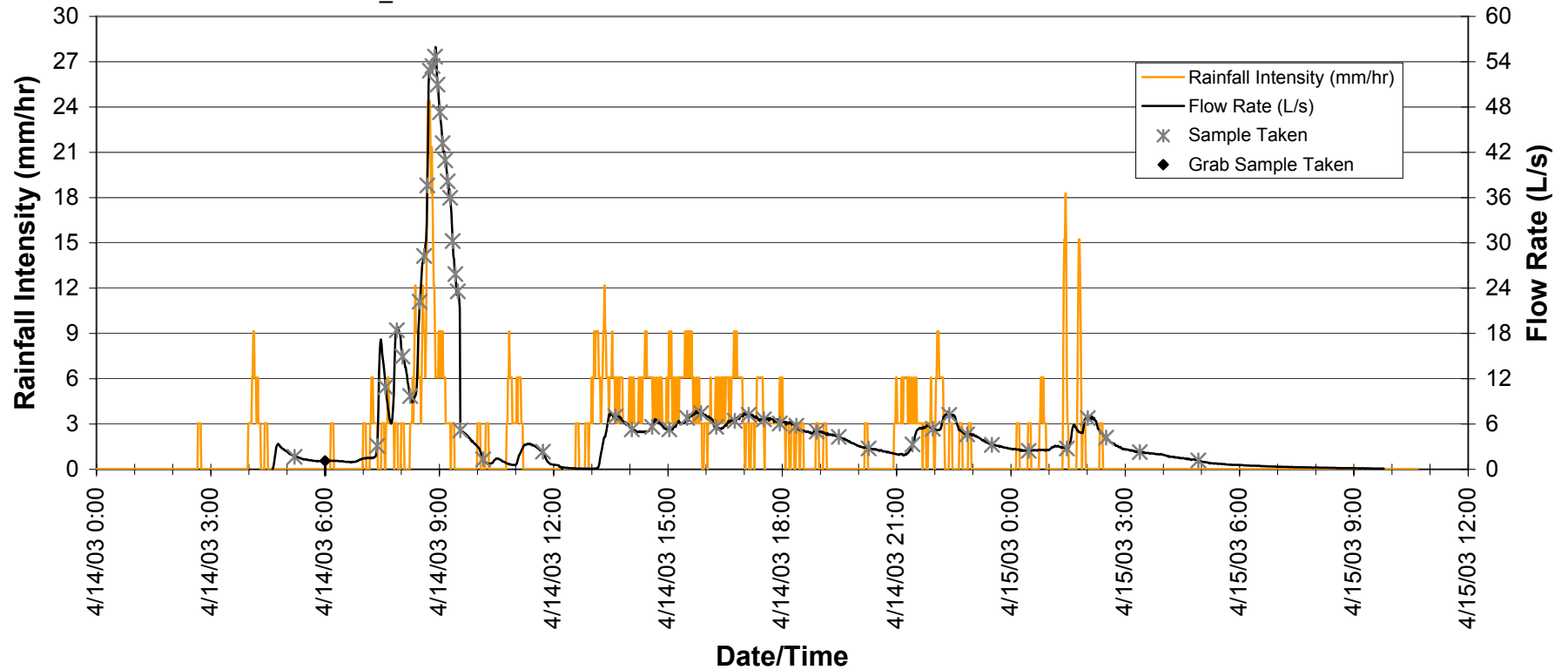
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## Event Summary

Site: 506R (12-212)

Catchment Area (ha): 3.01

Event: 4/14/03 to 4/15/03\_2002-06



### Rain Data

Start Date/Time: 04/14/03 02:40  
 Stop Date/Time: 04/15/03 02:20  
 Event Rain (mm): 54.61  
 Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 04:37  
 Stop Date/Time: 04/15/03 09:47  
 Total Flow Volume (L): 489966  
 Peak Flow (L/s): 55.95  
 Obs. Fraction Runoff/Rain Volume: 0.298

### Sample Data

Start Date/Time: 04/14/03 04:37  
 Stop Date/Time: 04/15/03 04:57  
 Estimated Percent Capture: 99%  
 Successful Aliquots: 50

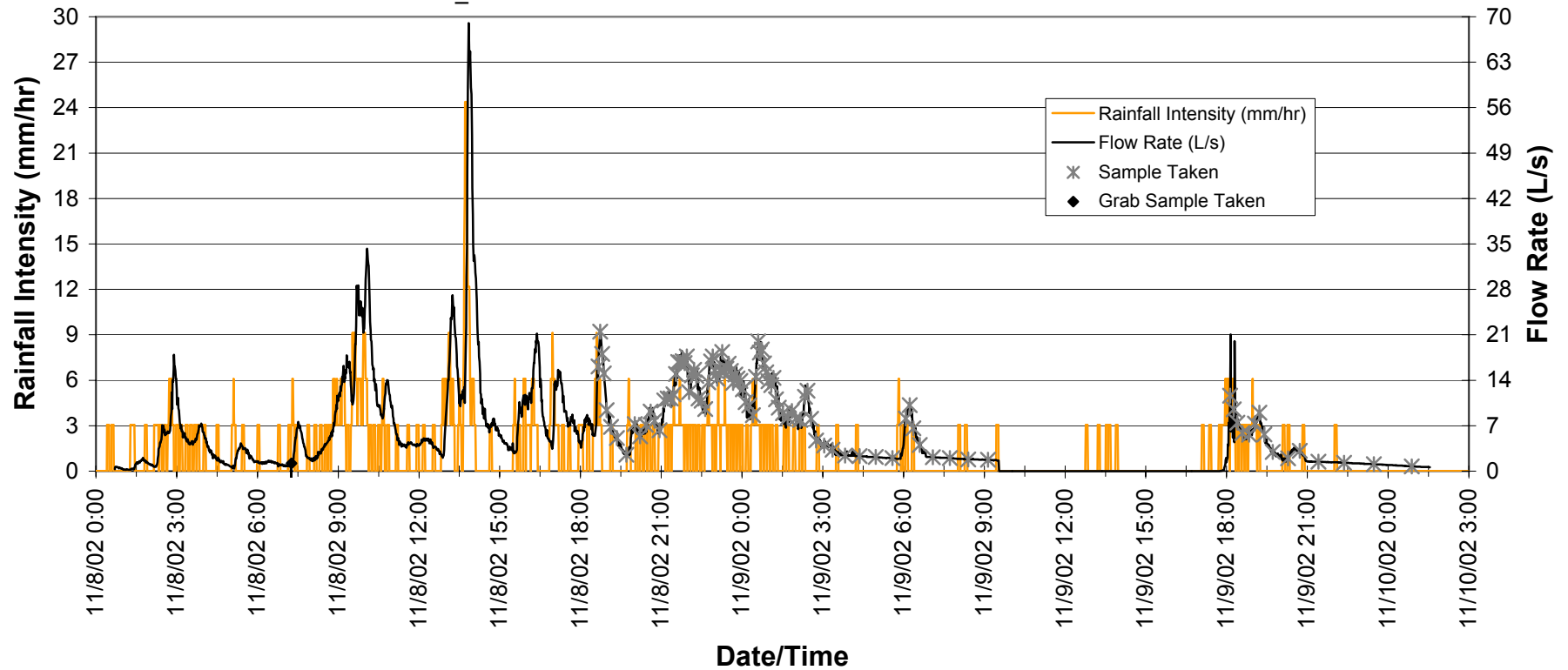
Notes:

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 3.8

Event: 11/08/2002 to 11/09/2002\_2002-01



### Rain Data

Start Date/Time: 11/08/02 00:25  
 Stop Date/Time: 11/09/02 22:01  
 Event Rain (mm): 57.91  
 Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 11/08/02 00:42  
 Stop Date/Time: 11/10/02 01:33  
 Total Flow Volume (L): 959869  
 Peak Flow (L/s): 69.02  
 Obs. Fraction Runoff/Rain Volume: 0.436

### Sample Data

Start Date/Time: 11/08/02 00:42  
 Stop Date/Time: 11/10/02 00:55  
 Estimated Percent Capture: 48-100%  
 Successful Aliquots: 100

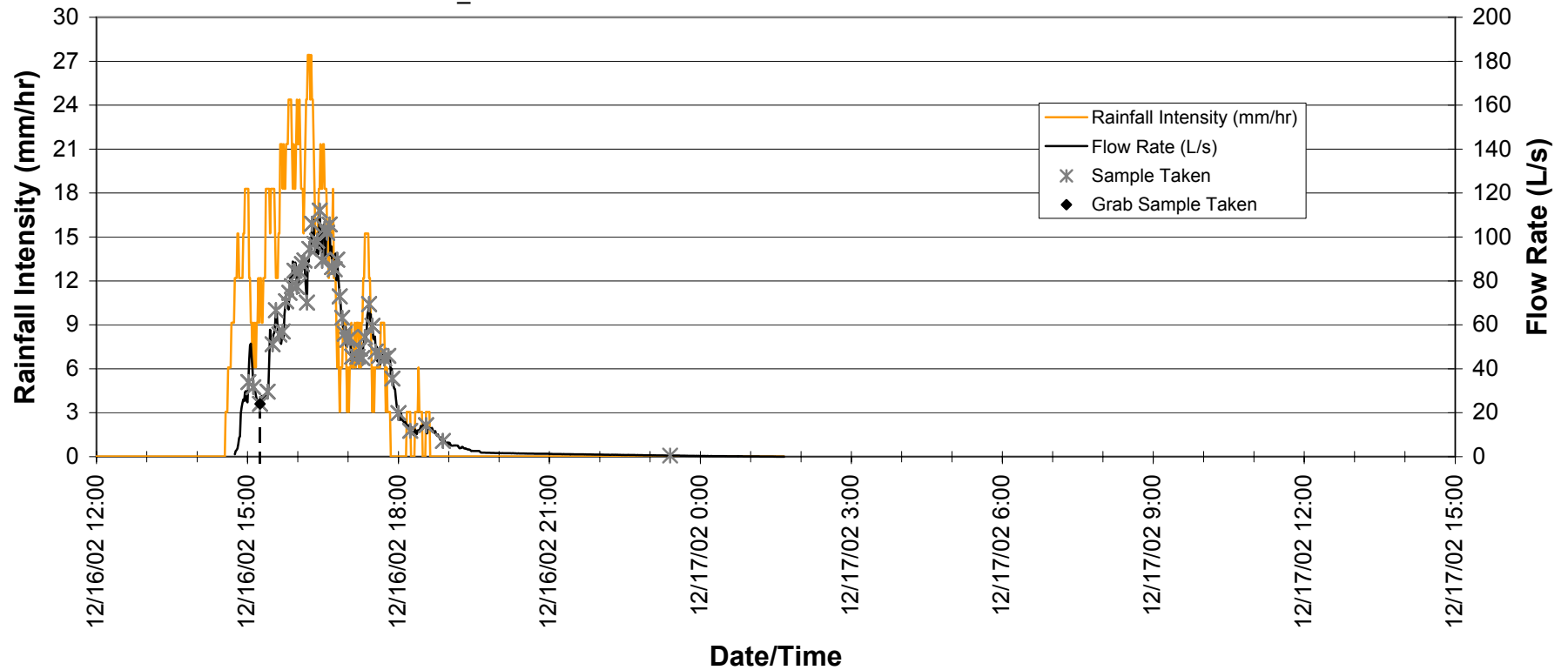
Notes: Sampler data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is based on assumption that all samples were collected successfully. Sampler history identified 0 failures during the entire storm event.

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 3.8

Event: 12/16/2002 to 12/17/2002\_2002-02



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:33  
Event Rain (mm): 44.70  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 14:45  
Stop Date/Time: 12/17/02 13:40  
Total Flow Volume (L): 749095  
Peak Flow (L/s): 112.07  
Obs. Fraction Runoff/Rain Volume: 0.441

### Sample Data

Start Date/Time: 12/16/02 14:45  
Stop Date/Time: 12/16/02 23:25  
Estimated Percent Capture: 100%  
Successful Aliquots: 101

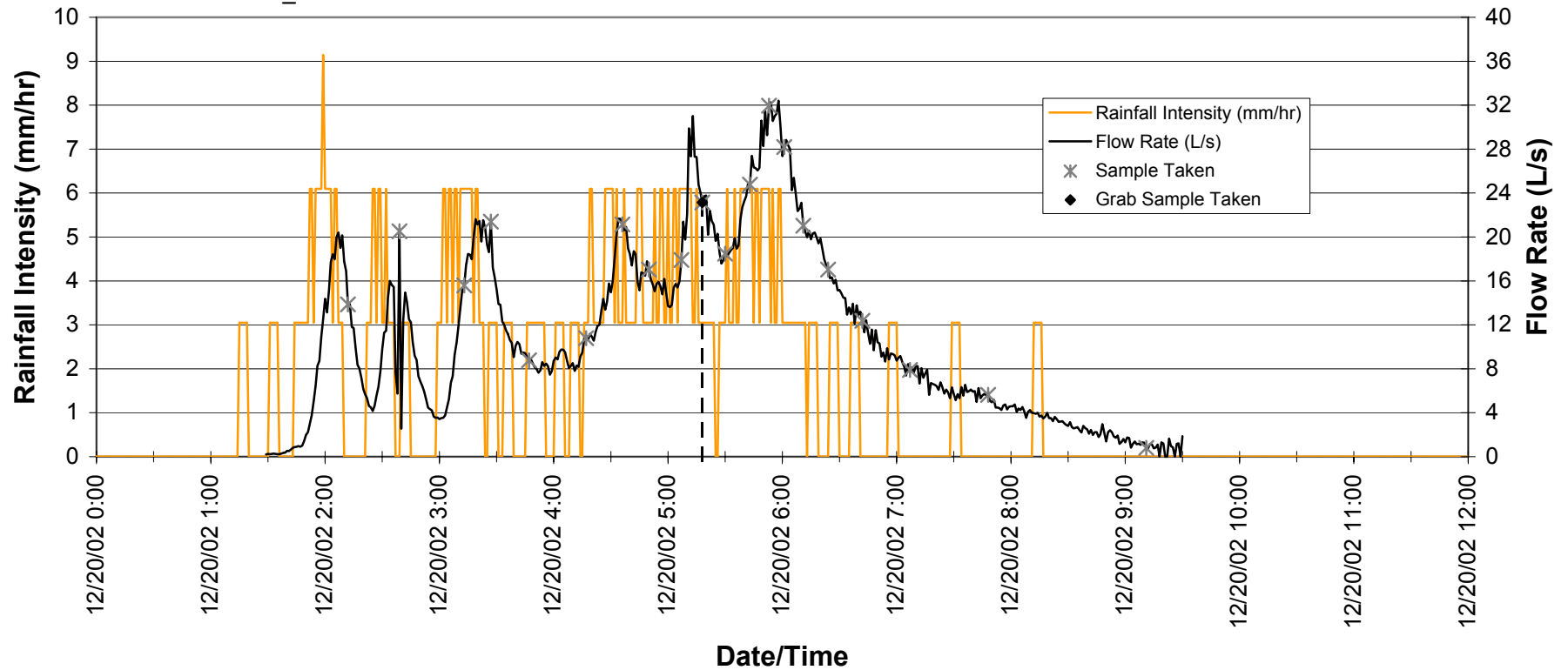
Notes:

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## Event Summary

Site: 604R (12-214)  
Event: 12/20/02\_2002-03

Catchment Area (ha): 3.8



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:12  
Event Rain (mm): 17.02  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 12/20/02 01:29  
Stop Date/Time: 12/20/02 09:30  
Total Flow Volume (L): 313462  
Peak Flow (L/s): 32.40  
Obs. Fraction Runoff/Rain Volume: 0.485

### Sample Data

Start Date/Time: 12/20/02 01:29  
Stop Date/Time: 12/20/02 09:12  
Estimated Percent Capture: 100%  
Successful Aliquots: 20

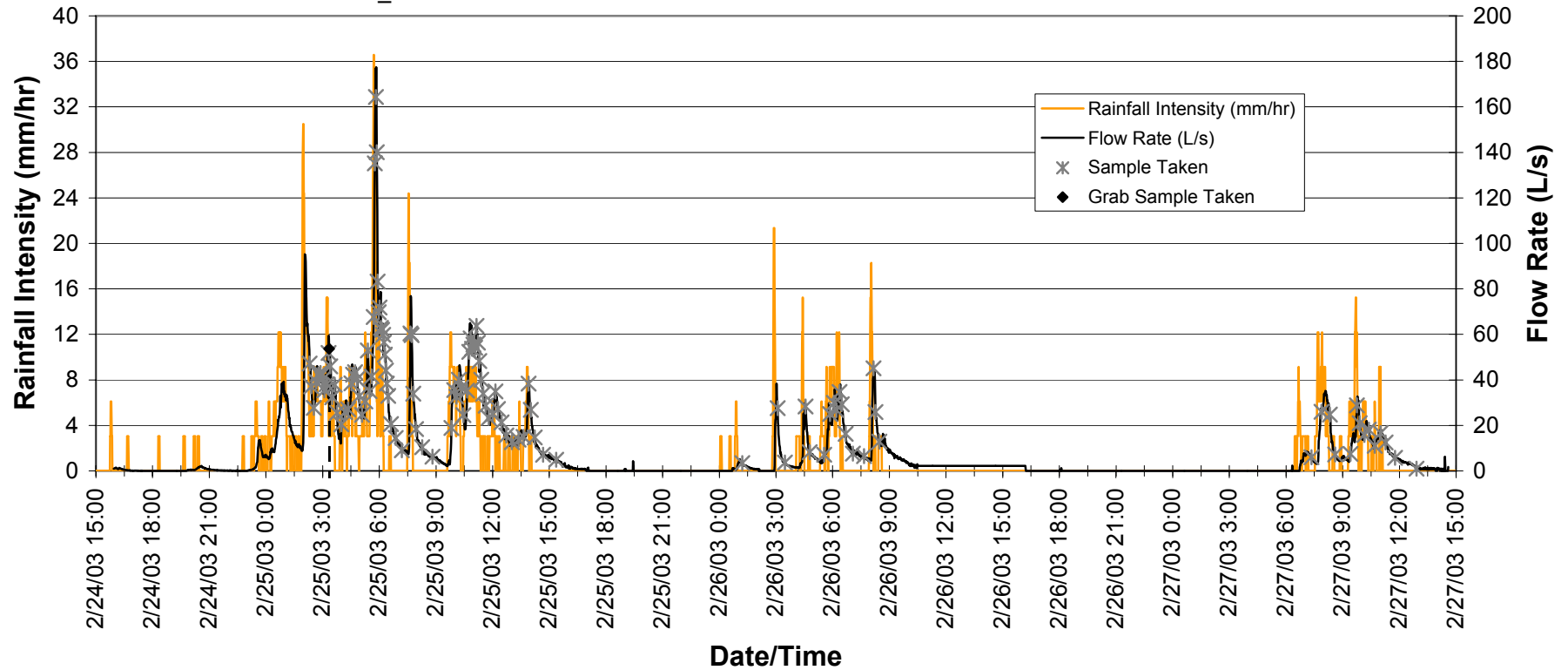
Notes:

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 3.8

Event: 2/24/03 to 2/27/03\_2002-04



### Rain Data (user-defined event)

Start Date/Time: 02/24/03 15:45  
 Stop Date/Time: 02/27/03 11:02  
 Event Rain (mm): 91.44  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 02/24/03 15:57  
 Stop Date/Time: 02/27/03 14:35  
 Total Flow Volume (L): 2111366  
 Peak Flow (L/s): 177.47  
 Obs. Fraction Runoff/Rain Volume: 0.608

### Sample Data

Start Date/Time: 02/24/03 15:57  
 Stop Date/Time: 02/27/03 12:55  
 Estimated Percent Capture: 99%  
 Avg. Successful Aliquots/Bottle: 113  
 Max. Successful Aliquots (Bottle#1): 114

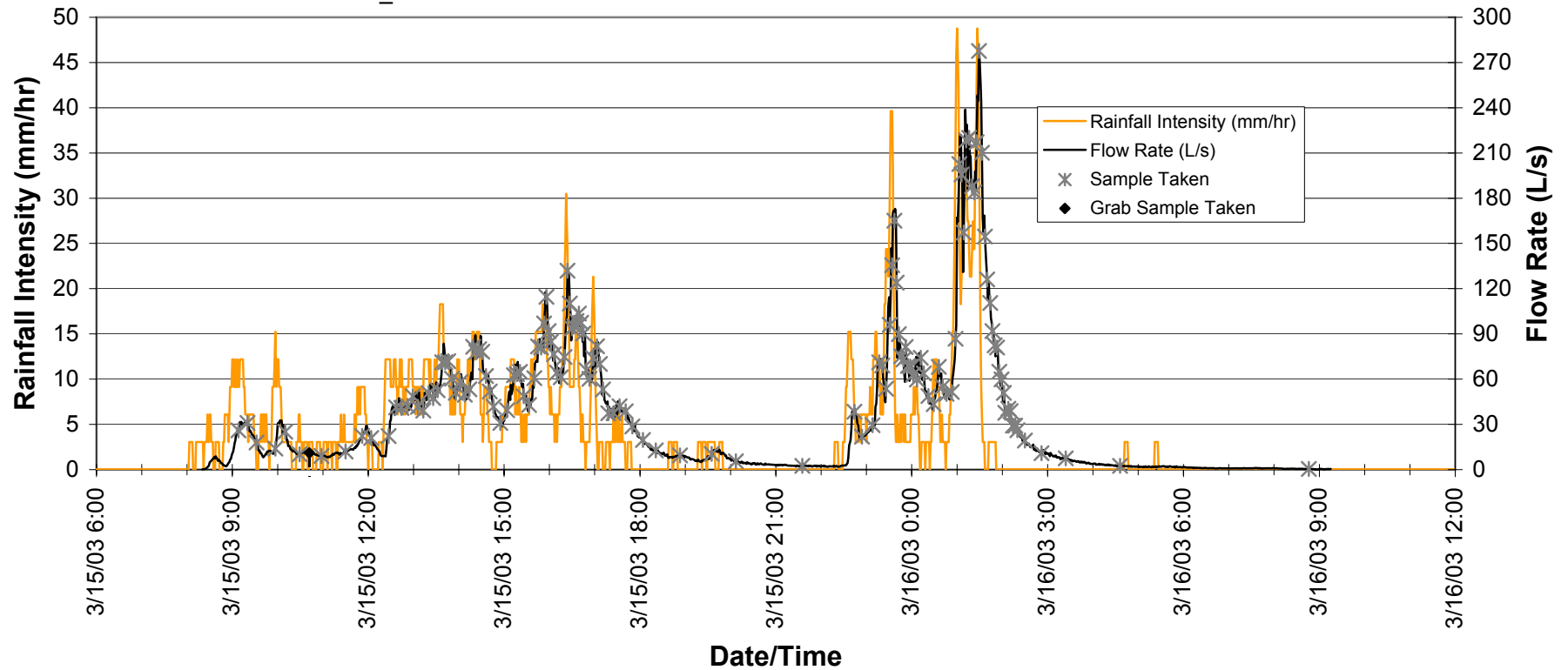
Notes: 12-214 is an inlet to a compost filter (CSF) that treats discharge from a basin that detains storm water and takes several days to drain. Because of the slow draining characteristics of the basin, the monitoring period for this monitoring location was extended and included multiple Caltrans-defined storm events.

## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 3.8

Event: 3/15/03 to 3/16/03\_2002-05



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 08:20  
Stop Date/Time: 03/16/03 09:15  
Total Flow Volume (L): 2698381  
Peak Flow (L/s): 277.62  
Obs. Fraction Runoff/Rain Volume: 0.662

### Sample Data

Start Date/Time: 03/15/03 08:20  
Stop Date/Time: 03/16/03 08:47  
Estimated Percent Capture: 100%  
Avg. Successful Aliquots/Bottle: 134  
Max. Successful Aliquots (Bottle#1): 135

Notes:

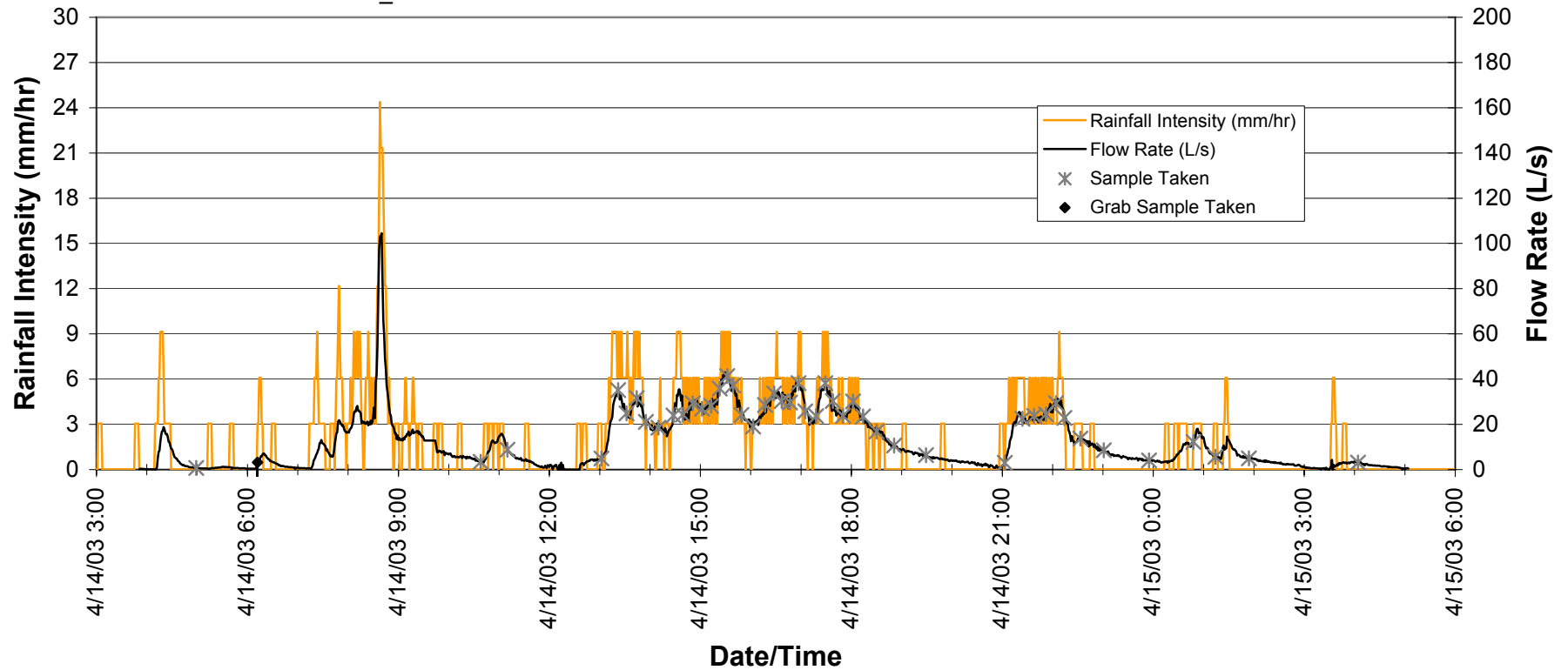
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## Event Summary

Site: 604R (12-214)

Catchment Area (ha): 3.8

Event: 4/14/03 to 4/15/03\_2002-06



### Rain Data

Start Date/Time: 04/14/03 03:02  
Stop Date/Time: 04/15/03 07:02  
Event Rain (mm): 53.09  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 03:51  
Stop Date/Time: 04/15/03 05:04  
Total Flow Volume (L): 1085680  
Peak Flow (L/s): 104.51  
Obs. Fraction Runoff/Rain Volume: 0.538

### Sample Data

Start Date/Time: 04/14/03 03:51  
Stop Date/Time: 04/15/03 04:05  
Estimated Percent Capture: 85%  
Successful Aliquots: 47

Notes:

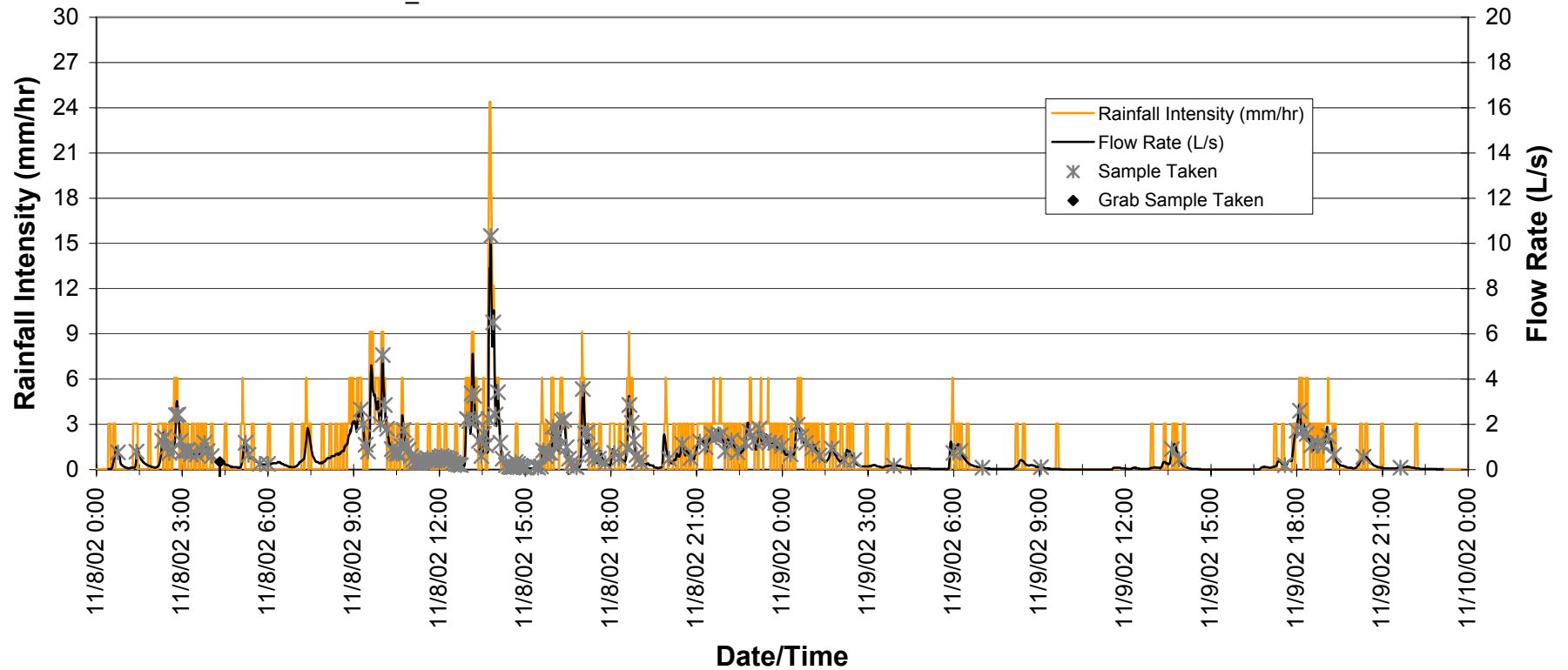
--

## Event Summary

Site: 604R (12-215)

Event: 11/08/02 to 11/09/02\_2002-01

Catchment Area (ha): 0.25



### Rain Data

Start Date/Time: 11/08/02 00:25  
Stop Date/Time: 11/09/02 22:09  
Event Rain (mm): 57.91  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 11/08/02 00:25  
Stop Date/Time: 11/09/02 23:07  
Total Flow Volume (L): 99578  
Peak Flow (L/s): 10.33  
Obs. Fraction Runoff/Rain Volume: 0.688

### Sample Data

Start Date/Time: 11/08/02 00:25  
Stop Date/Time: 11/09/02 21:45  
Estimated Percent Capture: 99%  
Avg. Successful Aliquots/Bottle: 169  
Max. Successful Aliquots (Bottle#2): 170

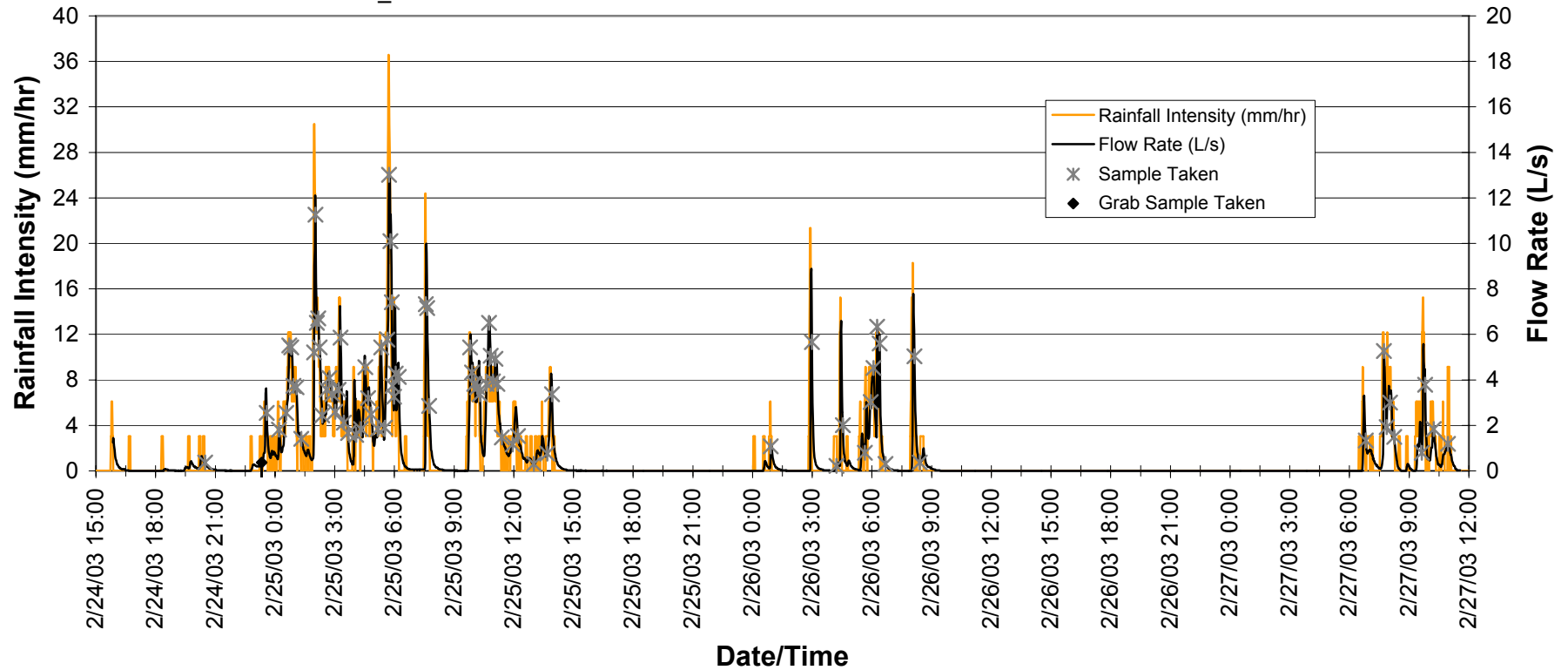
Notes:

## Event Summary

Site: 604R (12-215)

Catchment Area (ha): 0.25

Event: 2/24/03 to 2/27/03\_2002-04



### Rain Data (user-defined event)

Start Date/Time: 02/24/03 15:45  
 Stop Date/Time: 02/27/03 11:02  
 Event Rain (mm): 91.44  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 02/24/03 15:51  
 Stop Date/Time: 02/27/03 11:34  
 Total Flow Volume (L): 152342  
 Peak Flow (L/s): 13.02  
 Obs. Fraction Runoff/Rain Volume: 0.666

### Sample Data

Start Date/Time: 02/24/03 15:51  
 Stop Date/Time: 02/27/03 10:59  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 80

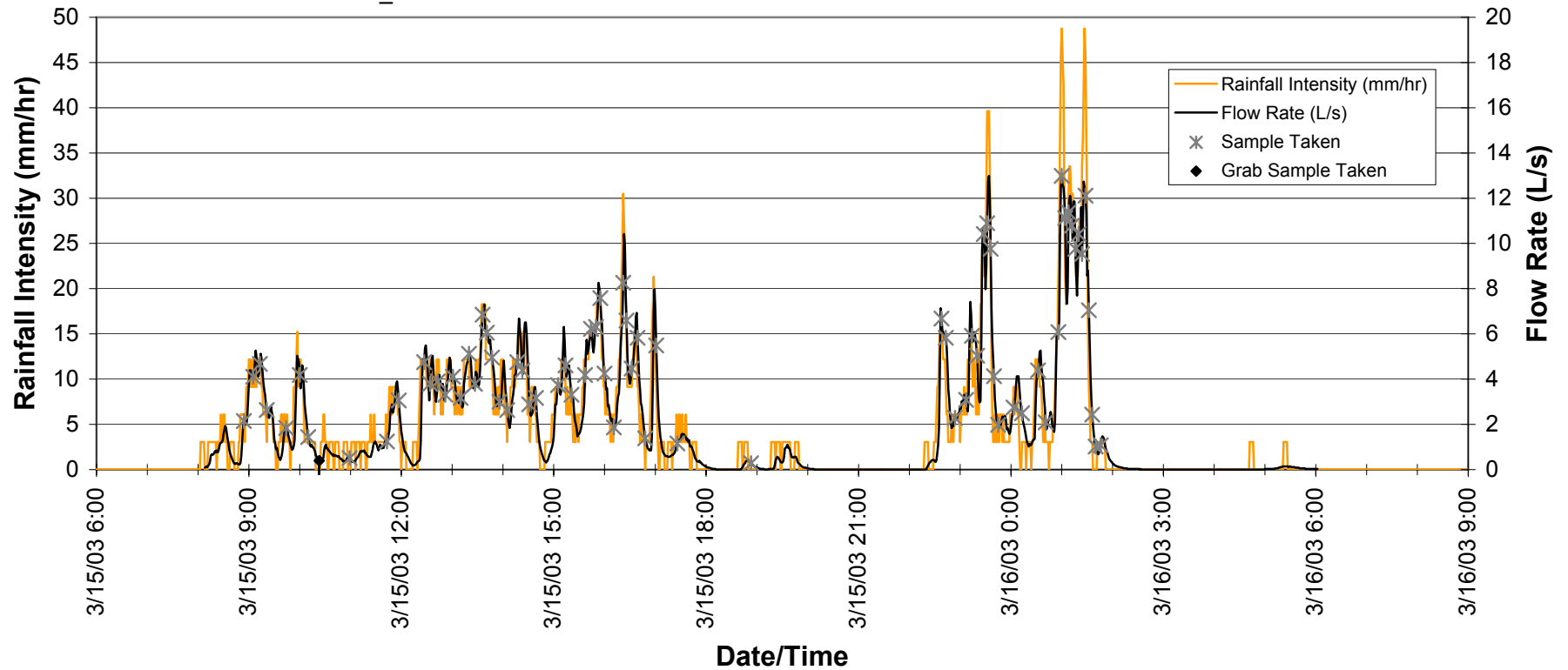
Notes: 12-215 is an inlet to a compost filter (CSF) that treats discharge from a basin that detains storm water and takes several days to drain. Because of the slow draining characteristics of the basin, the monitoring period for this monitoring location was extended and included multiple Caltrans-defined storm events.

## Event Summary

Site: 604R (12-215)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 0.25



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 08:08  
Stop Date/Time: 03/16/03 06:02  
Total Flow Volume (L): 150241  
Peak Flow (L/s): 12.99  
Obs. Fraction Runoff/Rain Volume: 0.561

### Sample Data

Start Date/Time: 03/15/03 08:08  
Stop Date/Time: 03/16/03 01:46  
Estimated Percent Capture: 98%  
Avg. Successful Aliquots/Bottle: 71  
Max. Successful Aliquots (Bottle#1): 72

Notes:

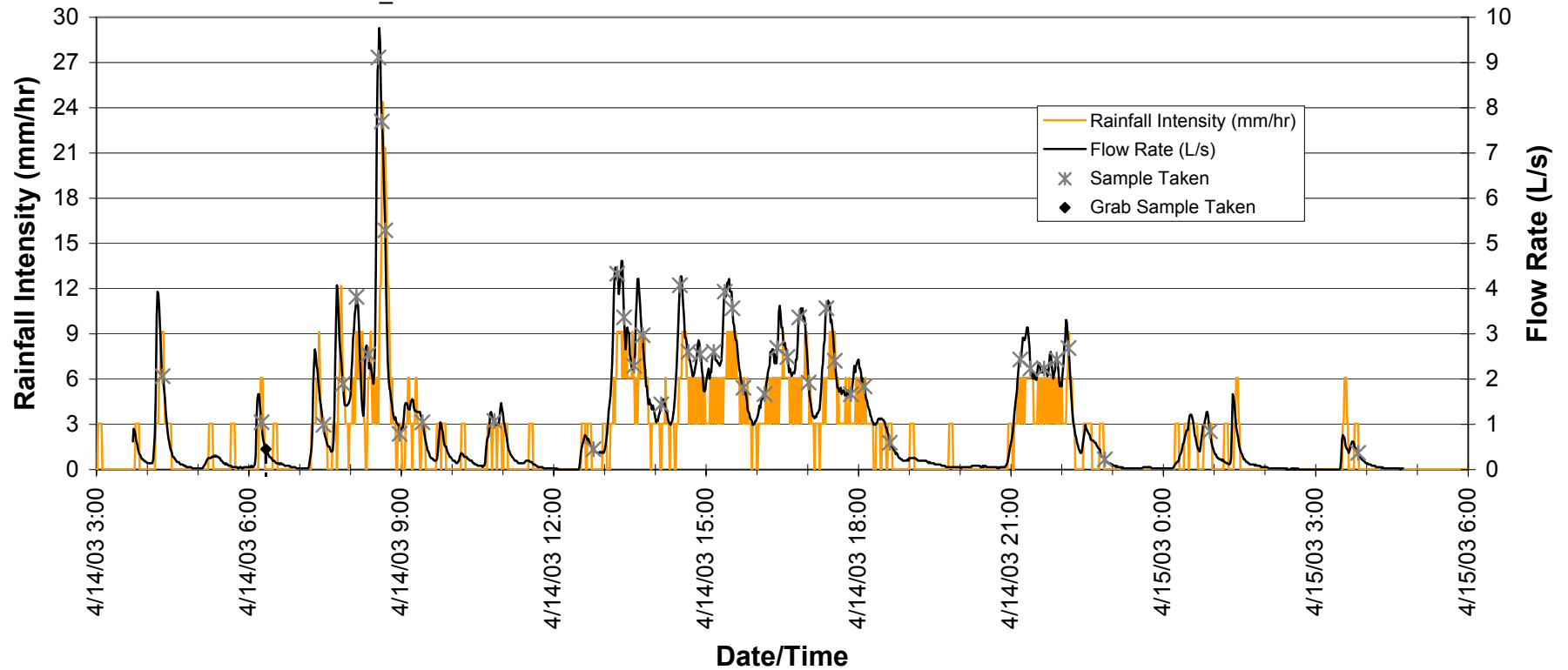
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## Event Summary

Site: 604R (12-215)

Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 0.25



### Rain Data

Start Date/Time: 04/14/03 03:02  
Stop Date/Time: 04/15/03 07:02  
Event Rain (mm): 53.09  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 03:43  
Stop Date/Time: 04/15/03 04:43  
Total Flow Volume (L): 88969  
Peak Flow (L/s): 9.76  
Obs. Fraction Runoff/Rain Volume: 0.670

### Sample Data

Start Date/Time: 04/14/03 03:43  
Stop Date/Time: 04/15/03 03:52  
Estimated Percent Capture: 100%  
Successful Aliquots: 43

Notes:

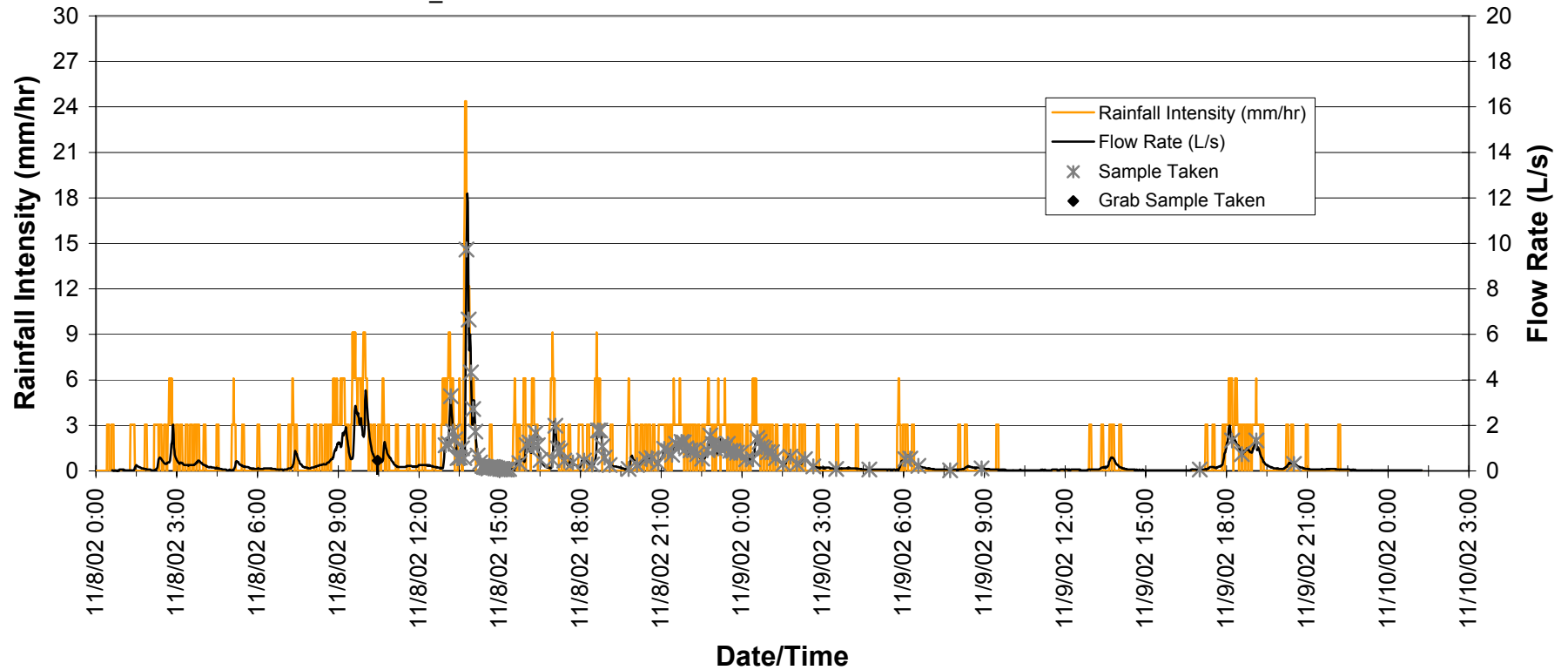
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## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.17

Event: 11/8/2002 to 11/9/2002\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:25  
 Stop Date/Time: 11/09/02 22:09  
 Event Rain (mm): 57.91  
 Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 11/08/02 00:36  
 Stop Date/Time: 11/10/02 01:15  
 Total Flow Volume (L): 69306  
 Peak Flow (L/s): 12.20  
 Obs. Fraction Runoff/Rain Volume: 0.704

### Sample Data

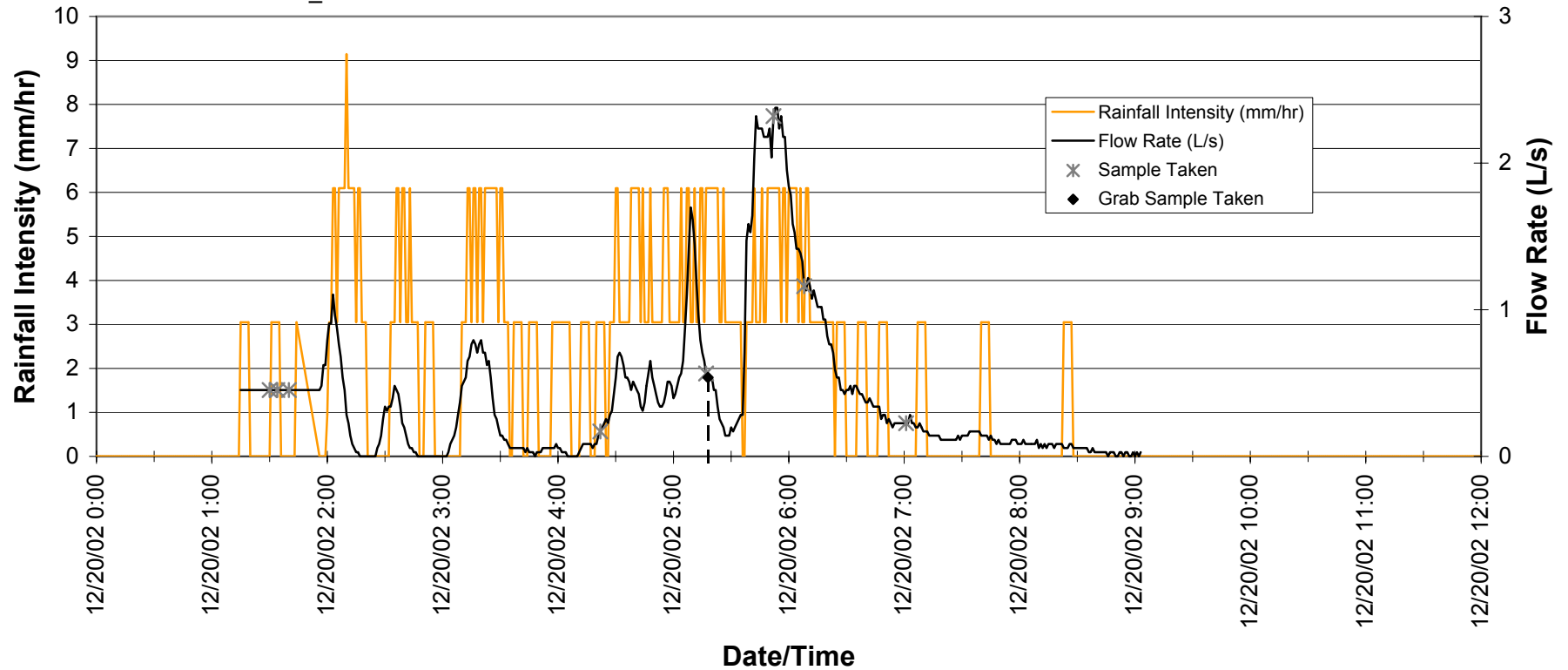
Start Date/Time: 11/08/02 00:36  
 Stop Date/Time: 11/09/02 20:32  
 Estimated Percent Capture: 75%  
 Successful Aliquots: 105

Notes: Sampler data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is based on assumption that all samples were collected successfully. Sampler history identified 0 failures during the entire storm event.

## Event Summary

Site: 604R (12-216)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 0.17



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:23  
Event Rain (mm): 17.02  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 09:03  
Total Flow Volume (L): 11306  
Peak Flow (L/s): 2.38  
Obs. Fraction Runoff/Rain Volume: 0.391

### Sample Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 07:03  
Estimated Percent Capture: 86%  
Successful Aliquots: 8

Notes:

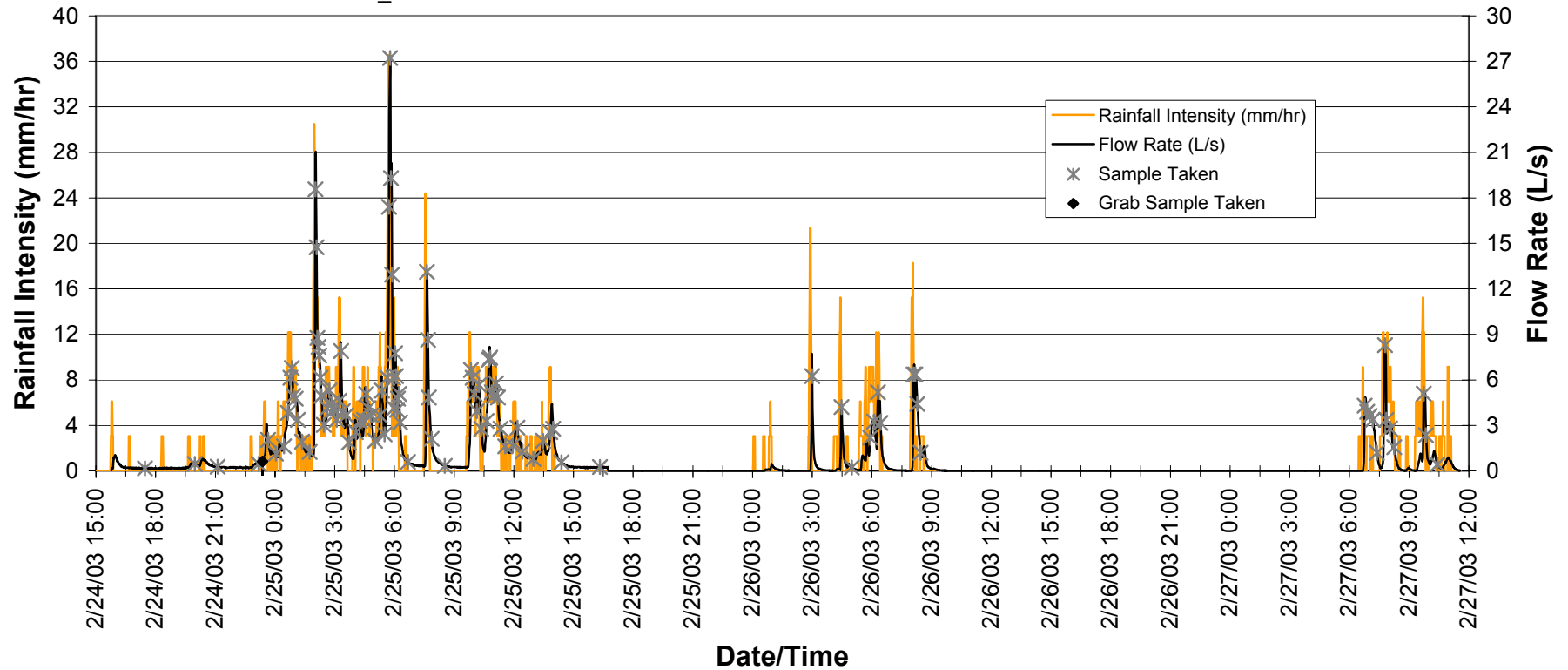
--

## Event Summary

Site: 604R (12-216)

Catchment Area (ha): 0.17

Event: 2/24/03 to 2/27/03\_2002-04



### Rain Data (user-defined event)

Start Date/Time: 02/24/03 15:45  
 Stop Date/Time: 02/27/03 11:02  
 Event Rain (mm): 91.44  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 02/24/03 15:46  
 Stop Date/Time: 02/27/03 11:33  
 Total Flow Volume (L): 208122  
 Peak Flow (L/s): 27.22  
 Obs. Fraction Runoff/Rain Volume: 1.339

### Sample Data

Start Date/Time: 02/24/03 15:46  
 Stop Date/Time: 02/27/03 10:27  
 Estimated Percent Capture: 99%  
 Avg. Successful Aliquots/Bottle: 109  
 Max. Successful Aliquots (Bottle#2): 110

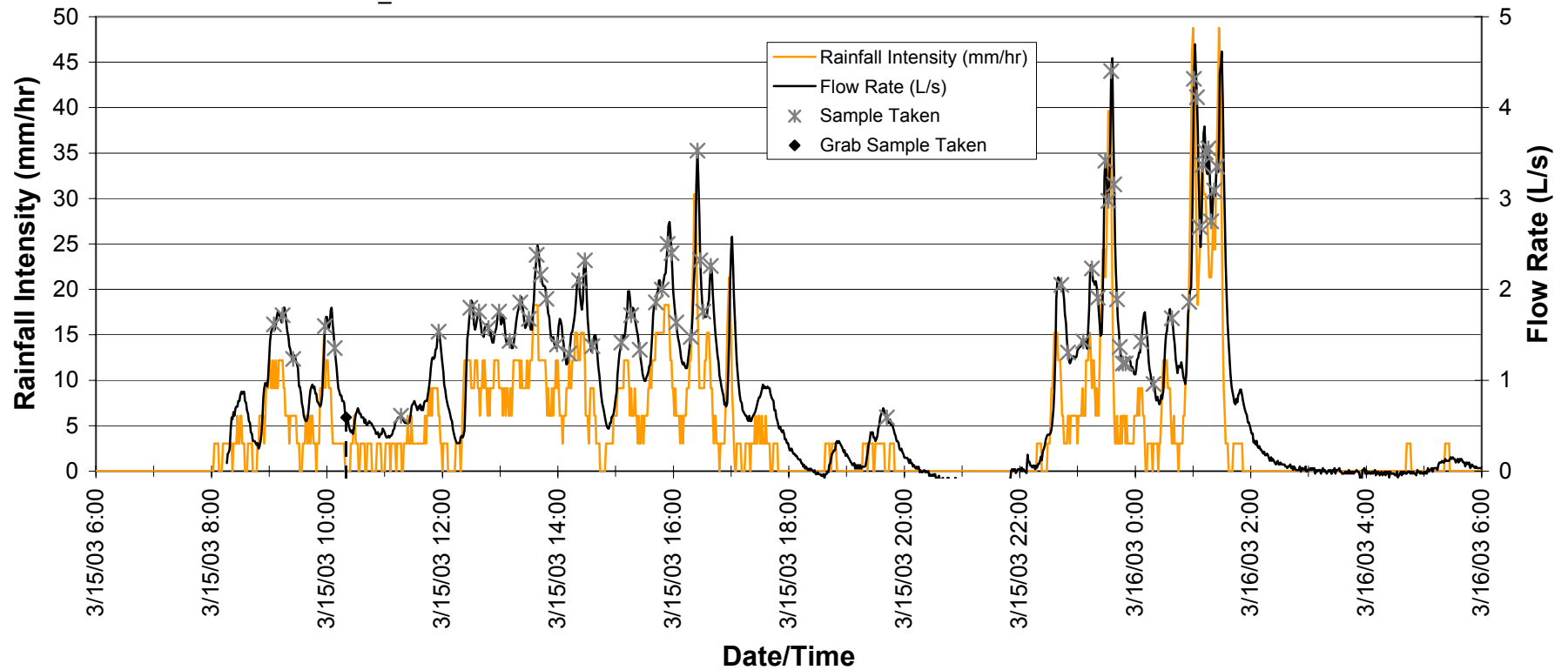
Notes: 12-216 is an inlet to a compost filter (CSF) that treats discharge from a basin that detains storm water and takes several days to drain. Because of the slow draining characteristics of the basin, the monitoring period for this monitoring location was extended and included multiple Caltrans-defined storm events.

## Event Summary

Site: 604R (12-216)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 0.17



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 08:16  
Stop Date/Time: 03/16/03 05:59  
Total Flow Volume (L): 65685  
Peak Flow (L/s): 4.70  
Obs. Fraction Runoff/Rain Volume: 0.360

### Sample Data

Start Date/Time: 03/15/03 08:16  
Stop Date/Time: 03/16/03 01:27  
Estimated Percent Capture: 89%  
Avg. Successful Aliquots/Bottle: 61  
Max. Successful Aliquots (Bottle#1): 62

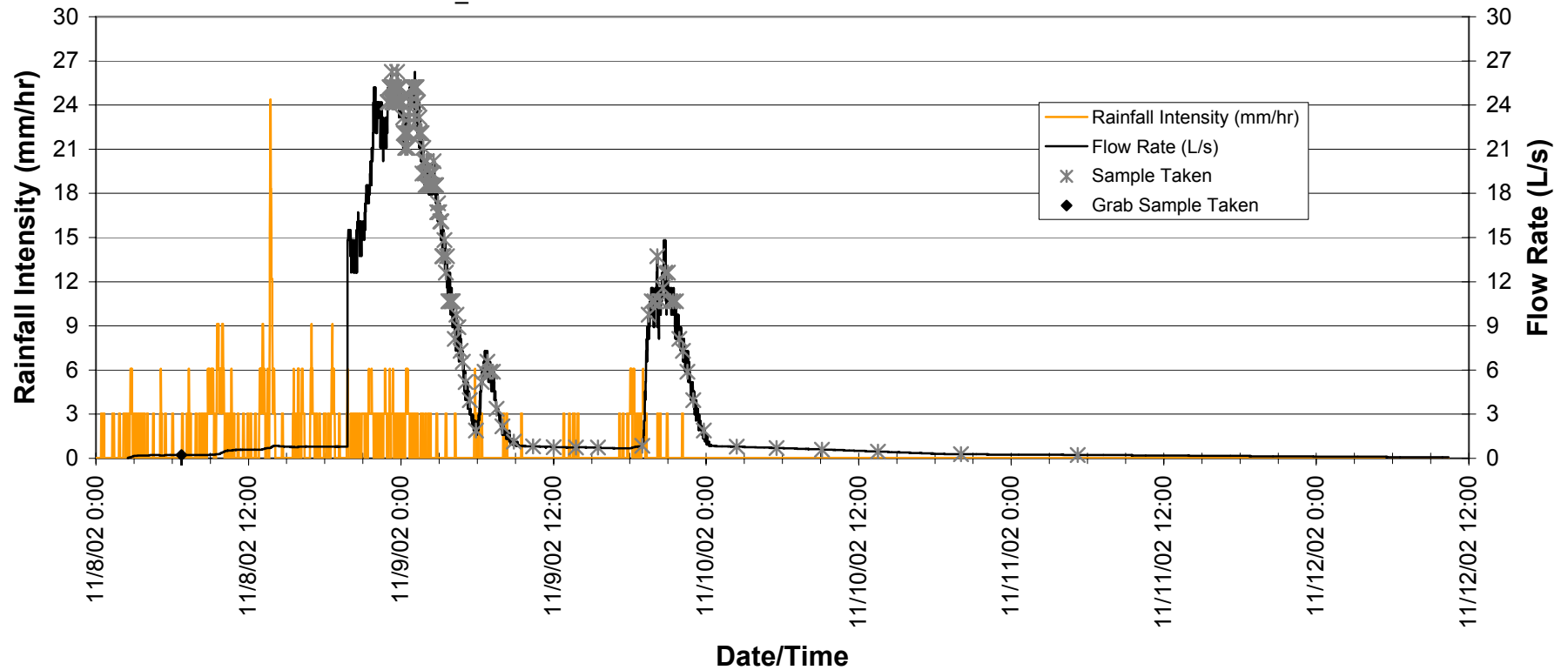
Notes:

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 4.98

Event: 11/08/2002 to 11/11/2002\_2002-01



### Rain Data

Start Date/Time: 11/08/02 00:25  
Stop Date/Time: 11/09/02 22:06  
Event Rain (mm): 57.91  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 11/08/02 02:30  
Stop Date/Time: 11/12/02 10:24  
Total Flow Volume (L): 921280  
Peak Flow (L/s): 26.26  
Obs. Fraction Runoff/Rain Volume: 0.319

### Sample Data

Start Date/Time: 11/08/02 02:30  
Stop Date/Time: 11/11/02 05:16  
Estimated Percent Capture: 72-99%  
Avg. Successful Aliquots/Bottle: 123  
Max. Successful Aliquots (Bottle#1): 124

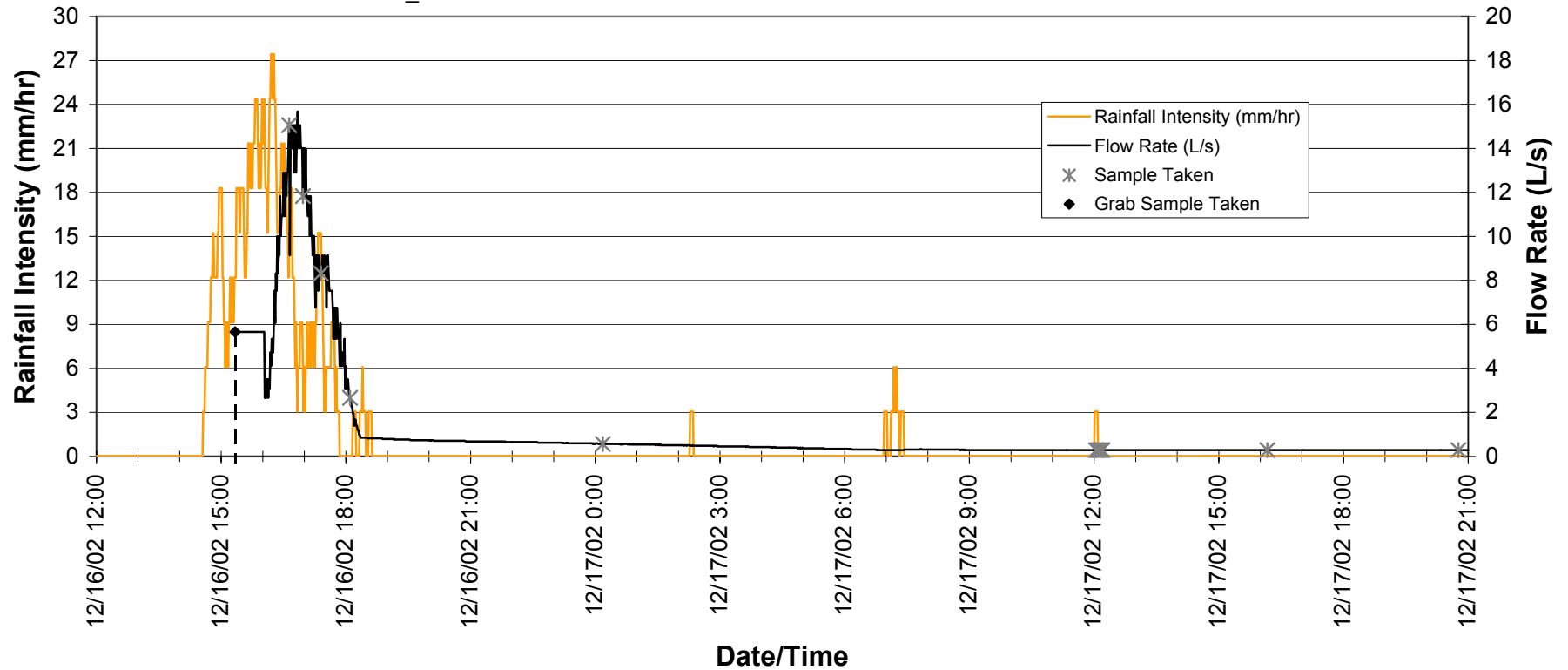
Notes: Sample data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is estimate based on assumption that all samples were collected successfully. Sampler history identified 0 failures during the entire storm event.

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 4.98

Event: 12/16/02 to 12/17/02\_2002-02



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:33  
Event Rain (mm): 44.70  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 15:20  
Stop Date/Time: 12/17/02 21:00  
Total Flow Volume (L): 120634  
Peak Flow (L/s): 15.68  
Obs. Fraction Runoff/Rain Volume: 0.054

### Sample Data

Start Date/Time: 12/16/02 16:03  
Stop Date/Time: 12/17/02 20:47  
Estimated Percent Capture: 75%  
Successful Aliquots: 11

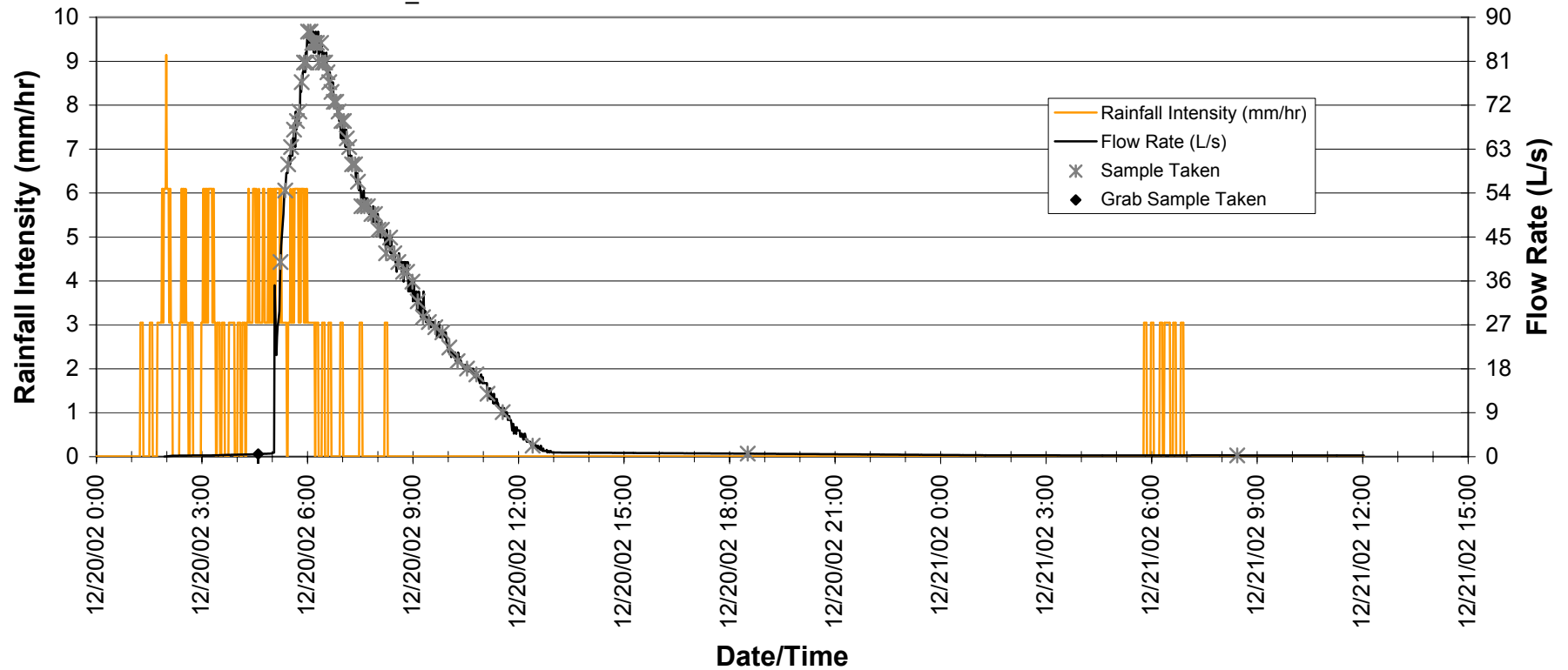
Notes:

## Event Summary

Site: 604R (12-217)

Event: 12/20/02 to 12/21/02\_2002-03

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:12  
Event Rain (mm): 17.02  
Max Intensity (mm/hr): 9.14

### Runoff Data

Start Date/Time: 12/20/02 01:56  
Stop Date/Time: 12/21/02 12:02  
Total Flow Volume (L): 1085523  
Peak Flow (L/s): 87.05  
Obs. Fraction Runoff/Rain Volume: 1.281

### Sample Data

Start Date/Time: 12/20/02 01:56  
Stop Date/Time: 12/21/02 08:27  
Estimated Percent Capture: 100%  
Successful Aliquots: 60

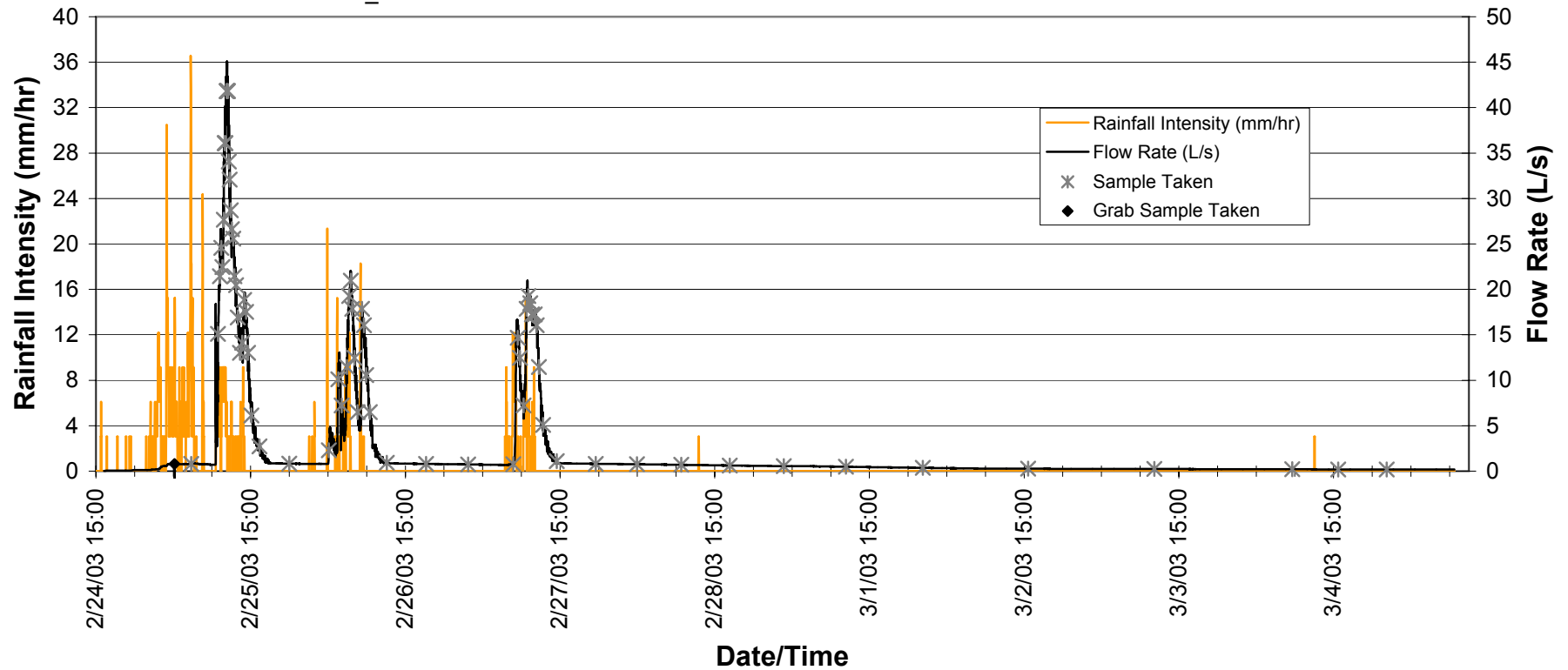
Notes:

## Event Summary

Site: 604R (12-217)

Catchment Area (ha): 4.98

Event: 2/24/03 to 3/5/03\_2002-04



### Rain Data (user-defined event)

Start Date/Time: 02/24/03 15:45  
 Stop Date/Time: 02/27/03 11:02  
 Event Rain (mm): 91.44  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 02/24/03 16:16  
 Stop Date/Time: 03/05/03 09:54  
 Total Flow Volume (L): 1216159  
 Peak Flow (L/s): 45.05  
 Obs. Fraction Runoff/Rain Volume: 0.267

### Sample Data

Start Date/Time: 02/24/03 16:16  
 Stop Date/Time: 03/04/03 23:16  
 Estimated Percent Capture: 98%  
 Successful Aliquots: 68

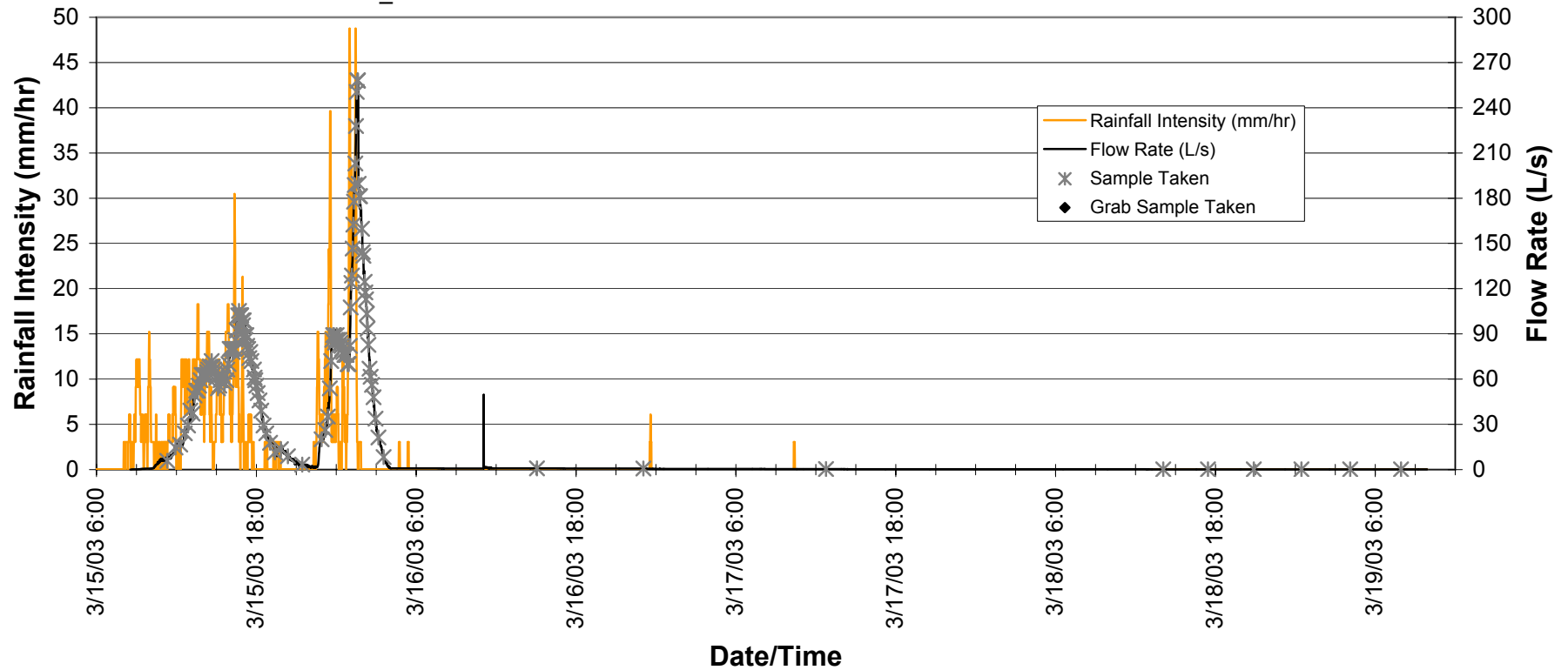
Notes: 0.76 mm of rainfall was truncated at the beginning of the storm due to the storm event definition built in the Hydrology Utility. The rain start and stop times were manually input into the tool to provide an accurate depiction of total rainfall and rain start time for the storm event.

## Event Summary

Site: 604R (12-217)

Event: 3/15/03 to 3/19/03\_2002-05

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 08:34  
Stop Date/Time: 03/19/03 09:53  
Total Flow Volume (L): 3171088  
Peak Flow (L/s): 258.10  
Obs. Fraction Runoff/Rain Volume: 0.594

### Sample Data

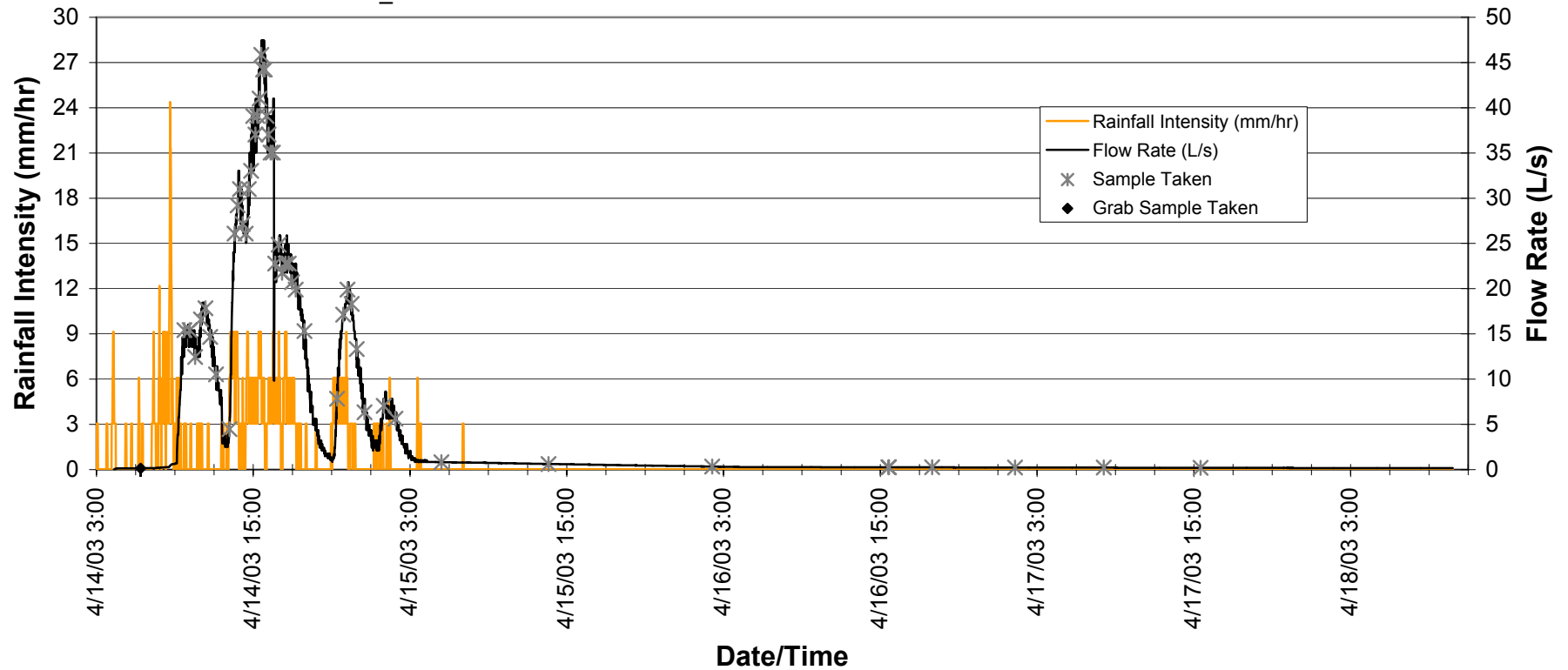
Start Date/Time: 03/15/03 08:34  
Stop Date/Time: 03/19/03 07:58  
Estimated Percent Capture: 99%  
Successful Aliquots: 137

Notes:

## Event Summary

Site: 604R (12-217)  
Event: 4/14/03 to 4/18/03\_2002-06

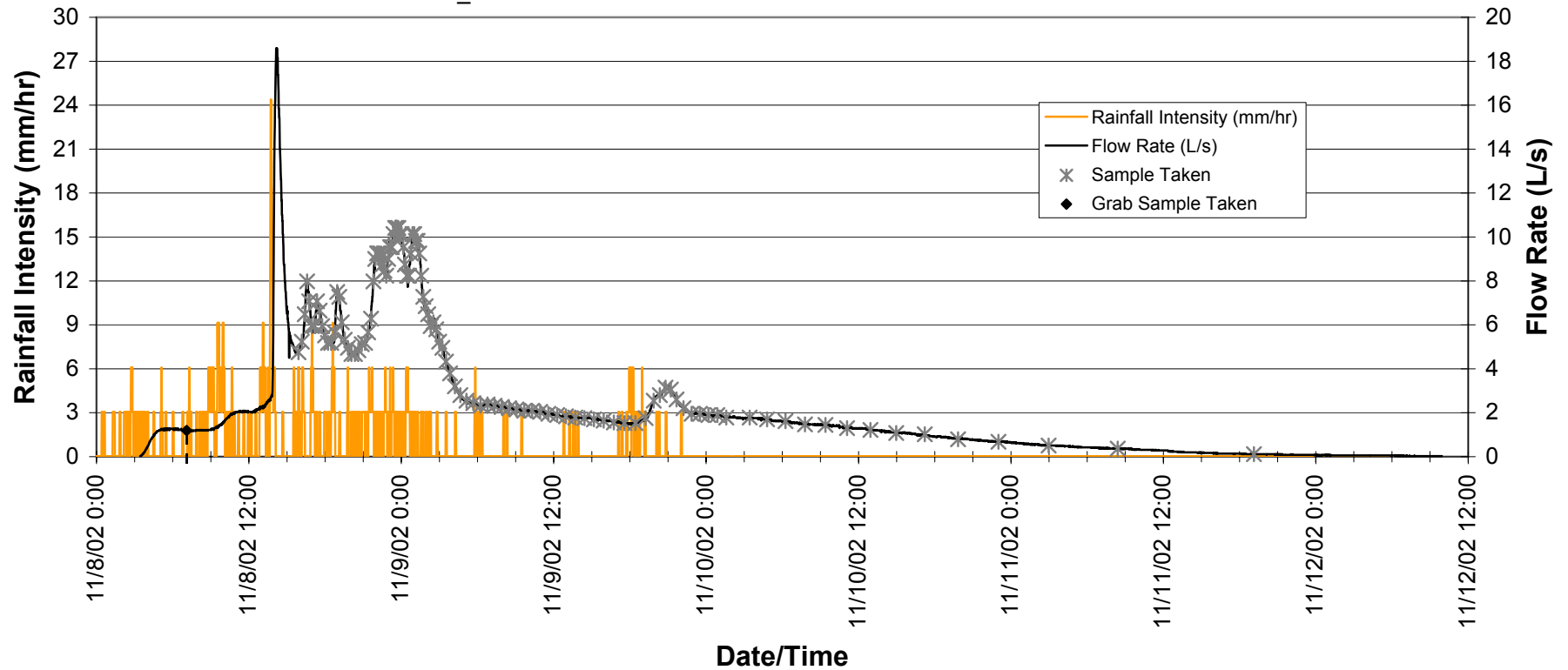
Catchment Area (ha): 4.98



## Event Summary

Site: 604R (12-218)  
Event: 11/08/2002 to 11/12/2002\_2002-01

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 11/08/02 00:25  
Stop Date/Time: 11/09/02 22:01  
Event Rain (mm): 57.91  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 11/08/02 03:26  
Stop Date/Time: 11/12/02 09:56  
Total Flow Volume (L): 708285  
Peak Flow (L/s): 18.59  
Obs. Fraction Runoff/Rain Volume: 0.246

### Sample Data

Start Date/Time: 11/08/02 03:26  
Stop Date/Time: 11/11/02 19:11  
Estimated Percent Capture: 83-99%  
Successful Aliquots: 114

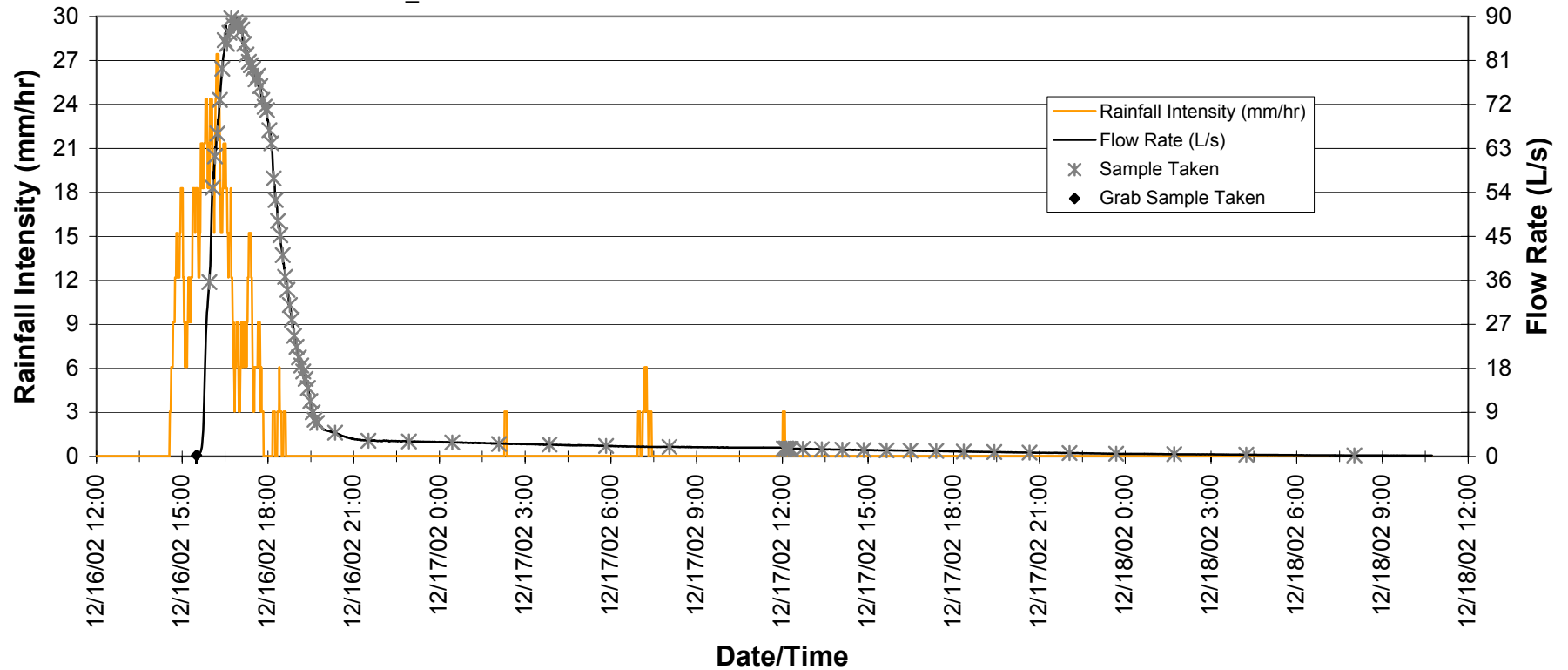
Notes: Sample data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is estimate based on assumption that all samples were collected successfully. Sampler history identified 0 failures during the entire storm event.

## Event Summary

Site: 604R (12-218)

Catchment Area (ha): 4.98

Event: 12/16/02 to 12/18/02\_2002-02



### Rain Data

Start Date/Time: 12/16/02 14:34  
 Stop Date/Time: 12/16/02 18:33  
 Event Rain (mm): 44.70  
 Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 15:20  
 Stop Date/Time: 12/18/02 10:44  
 Total Flow Volume (L): 990373  
 Peak Flow (L/s): 89.63  
 Obs. Fraction Runoff/Rain Volume: 0.445

### Sample Data

Start Date/Time: 12/16/02 15:20  
 Stop Date/Time: 12/18/02 08:04  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 75

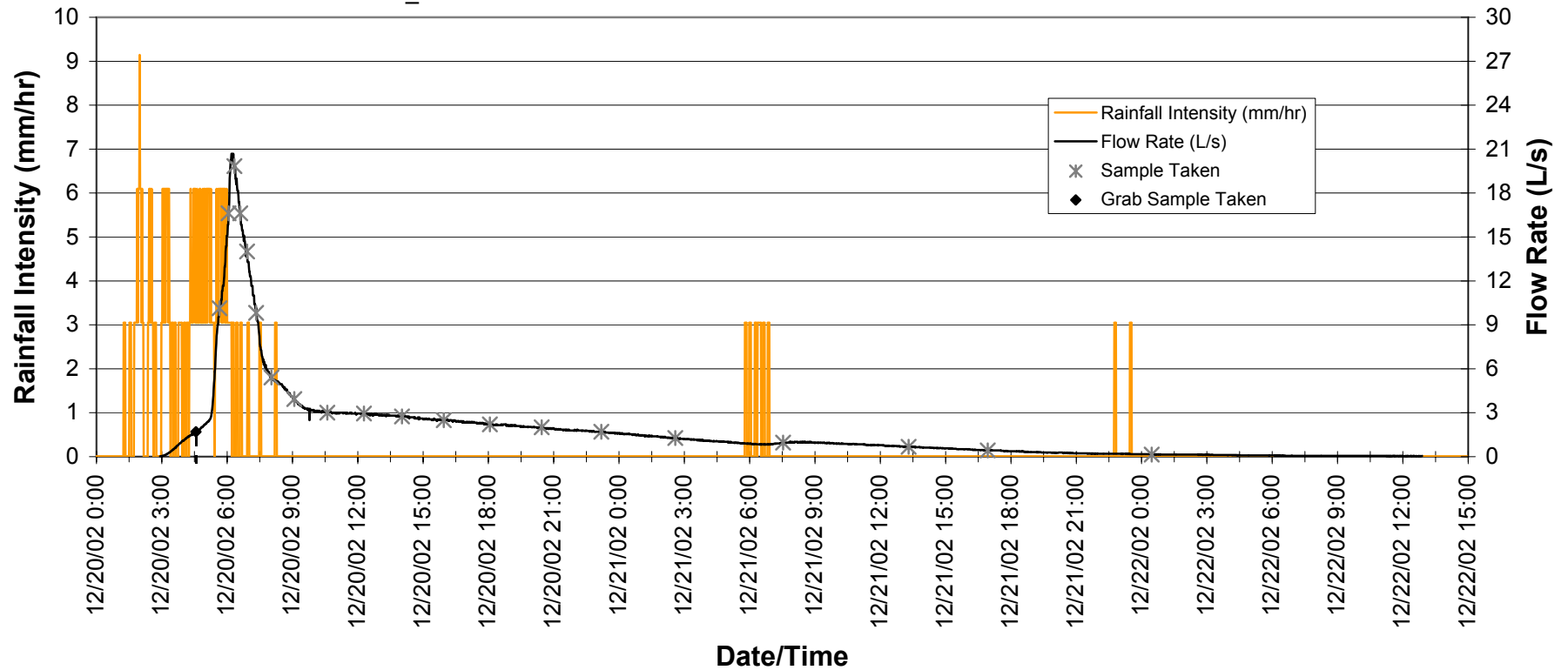
Notes:

## Event Summary

Site: 604R (12-218)

Event: 12/20/02 to 12/22/02\_2002-03

Catchment Area (ha): 4.98



### Rain Data

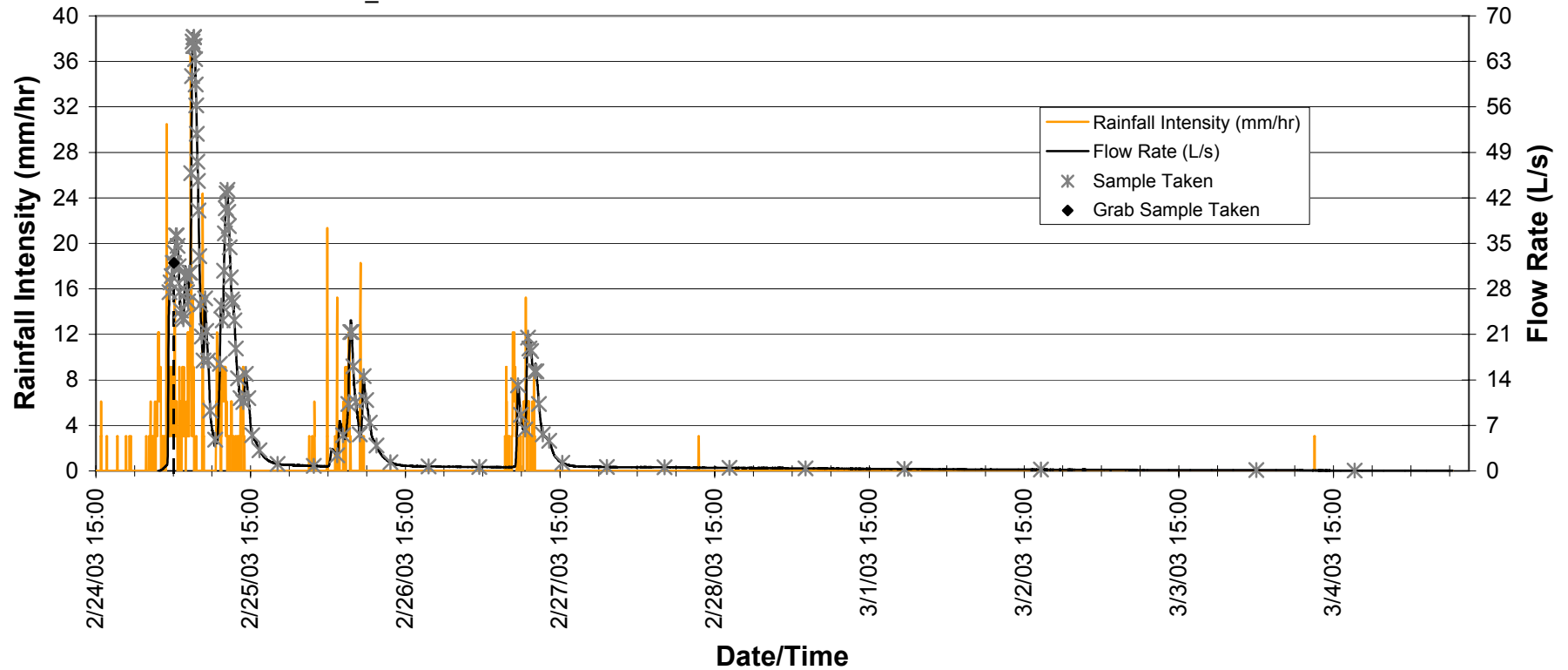
Start Date/Time: 12/20/02 01:15  
Stop Date/Time:

## Event Summary

Site: 604R (12-218 )

Catchment Area (ha): 4.98

Event: 2/25/03 to 3/5/03\_2002-04



### Rain Data (user-defined event)

Start Date/Time: 02/24/03 15:45  
 Stop Date/Time: 02/27/03 11:02  
 Event Rain (mm): 91.44  
 Max Intensity (mm/hr): 36.58

### Runoff Data

Start Date/Time: 02/25/03 00:46  
 Stop Date/Time: 03/05/03 09:26  
 Total Flow Volume (L): 1856310  
 Peak Flow (L/s): 67.41  
 Obs. Fraction Runoff/Rain Volume: 0.408

### Sample Data

Start Date/Time: 02/25/03 00:46  
 Stop Date/Time: 03/04/03 18:19  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 103

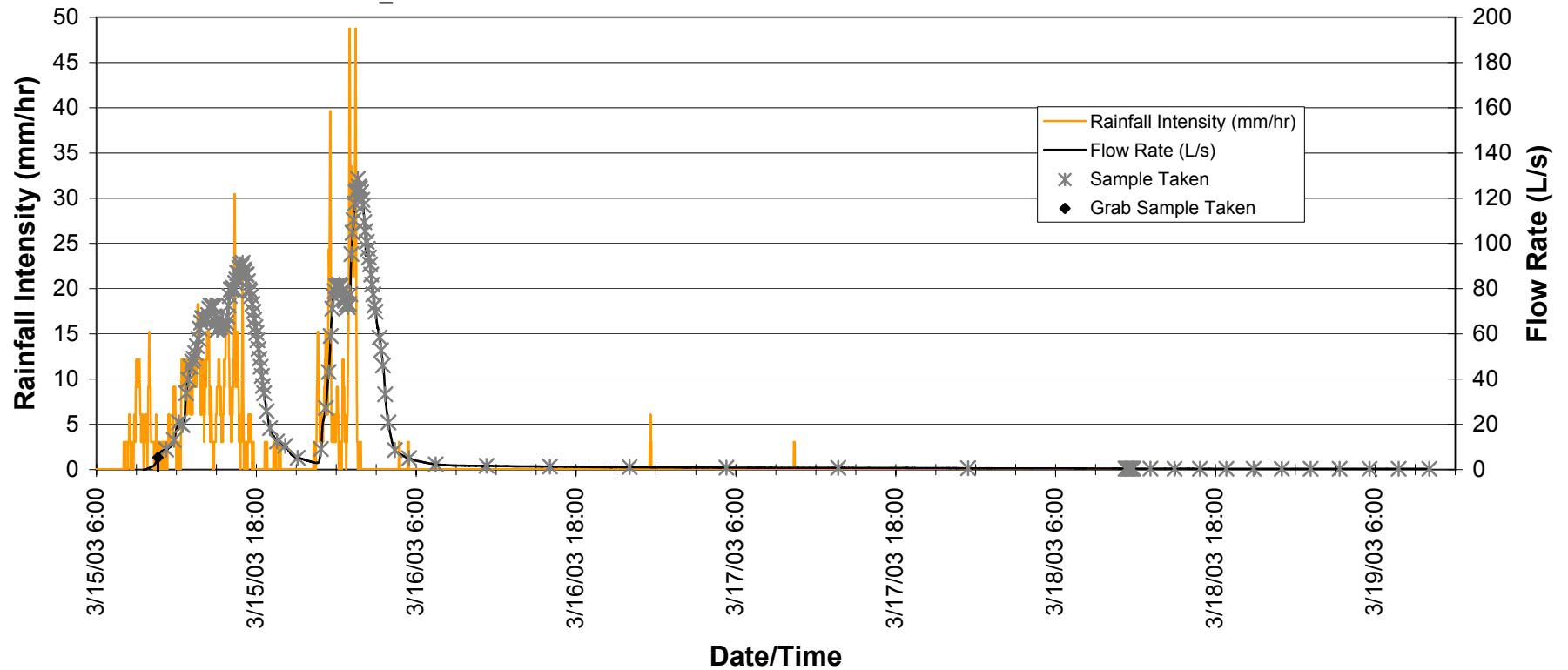
Notes: 0.76 mm of rainfall was truncated at the beginning of the storm due to the storm event definition built in the Hydrology Utility. The rain start and stop times were manually input into the tool to provide an accurate depiction of total rainfall and rain start time for the storm event.

## Event Summary

Site: 604R (12-218)

Event: 3/15/03 to 3/19/03\_2002-05

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 09:31  
Stop Date/Time: 03/19/03 10:06  
Total Flow Volume (L): 3298969  
Peak Flow (L/s): 129.44  
Obs. Fraction Runoff/Rain Volume: 0.618

### Sample Data

Start Date/Time: 03/15/03 09:31  
Stop Date/Time: 03/19/03 10:05  
Estimated Percent Capture: 100%  
Successful Aliquots: 151

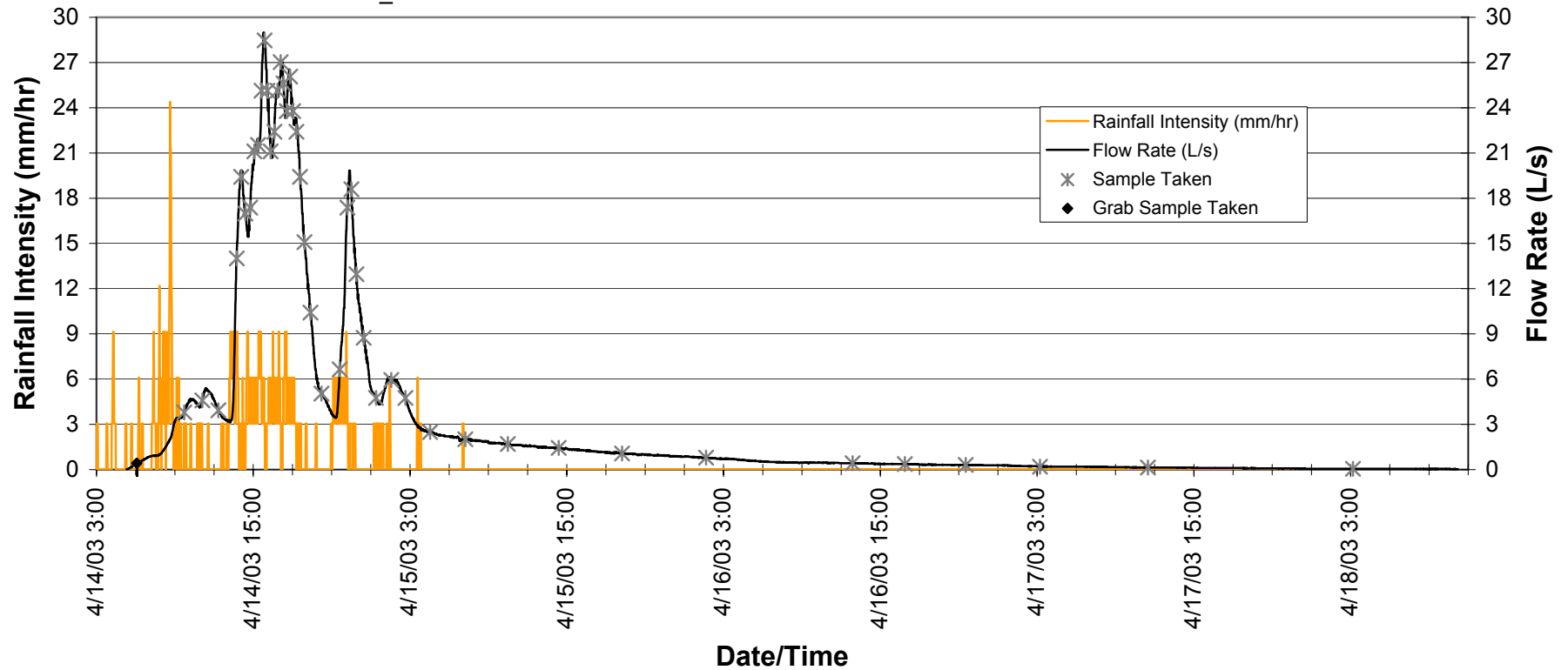
Notes:

## Event Summary

Site: 604R (12-218)

Event: 4/14/03 to 4/18/03\_2002-06

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 04/14/03 03:02  
Stop Date/Time: 04/15/03 07:02  
Event Rain (mm): 53.09  
Max Intensity (mm/hr): 24.38

### Runoff Data

Start Date/Time: 04/14/03 05:18  
Stop Date/Time: 04/18/03 11:14  
Total Flow Volume (L): 893131  
Peak Flow (L/s): 28.98  
Obs. Fraction Runoff/Rain Volume: 0.338

### Sample Data

Start Date/Time: 04/14/03 05:18  
Stop Date/Time: 04/18/03 03:13  
Estimated Percent Capture: 100%  
Successful Aliquots: 45

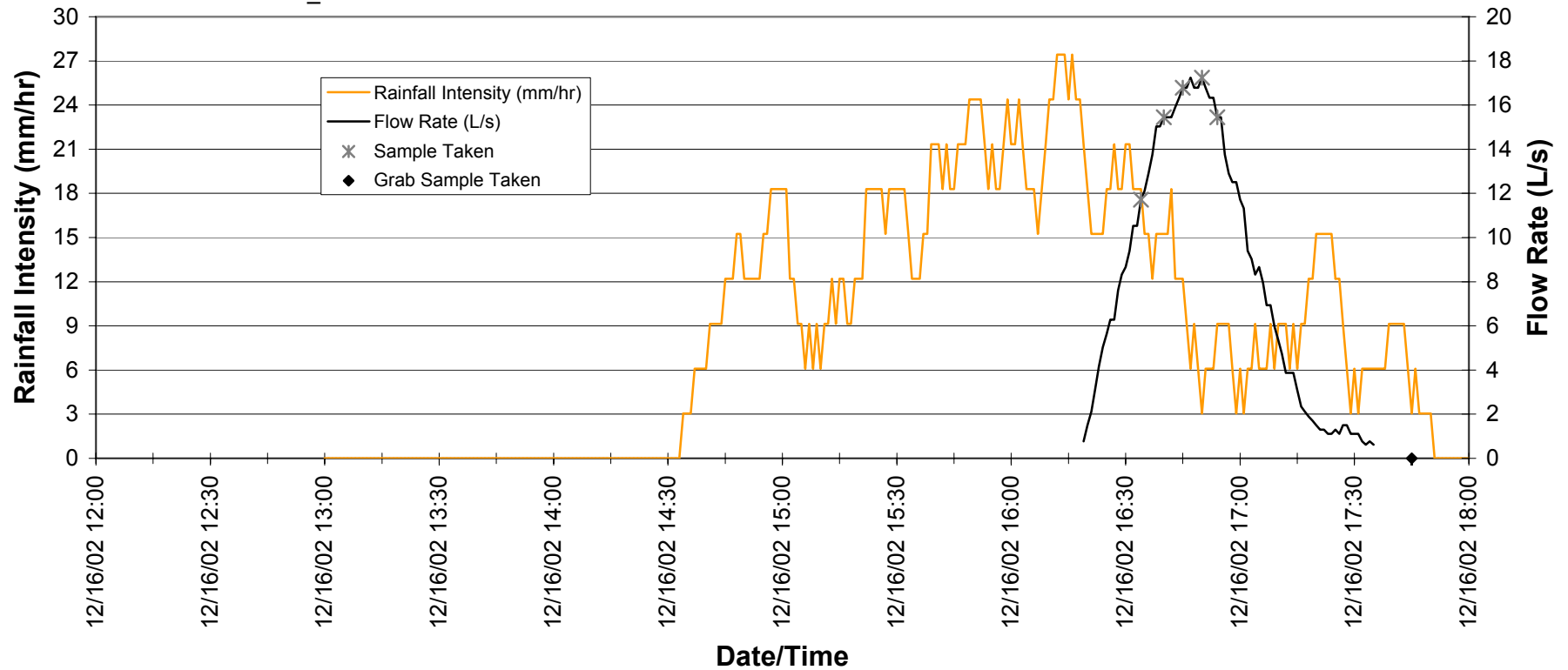
Notes:

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## Event Summary

Site: 604R (12-219)  
Event: 12/16/2002\_2002-02

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:33  
Event Rain (mm): 44.70  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 12/16/02 16:19  
Stop Date/Time: 12/16/02 17:35  
Total Flow Volume (L): 37131  
Peak Flow (L/s): 17.23  
Obs. Fraction Runoff/Rain Volume: 0.017

### Sample Data

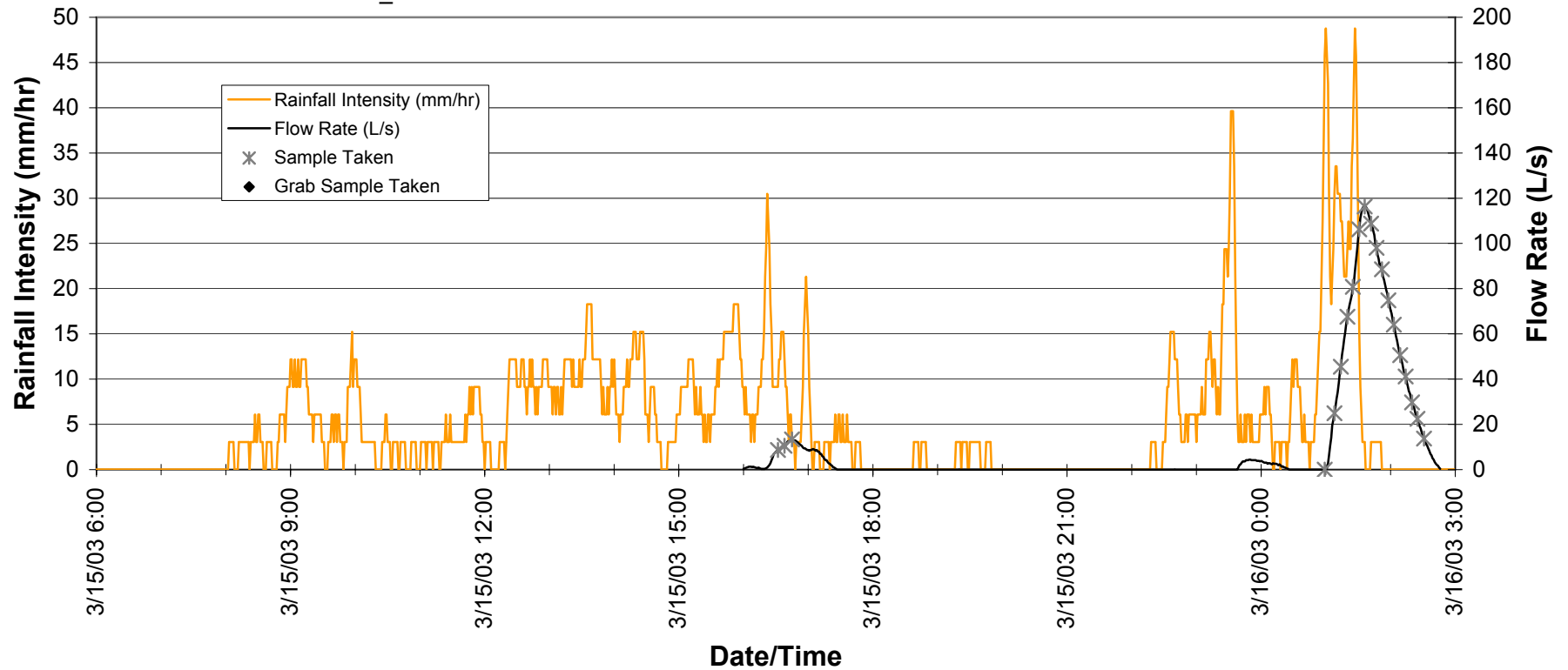
Start Date/Time: 12/16/02 16:19  
Stop Date/Time: 12/16/02 16:58  
Estimated Percent Capture: 71%  
Successful Aliquots: 5

Notes: Flow Equalization Basin overflow. Basin overflowed for approximately 1.25 hours.

## Event Summary

Site: 604R (12-219)  
Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 4.98



### Rain Data

Start Date/Time: 03/15/03 08:03  
Stop Date/Time: 03/16/03 05:22  
Event Rain (mm): 107.19  
Max Intensity (mm/hr): 48.77

### Runoff Data

Start Date/Time: 03/15/03 16:00  
Stop Date/Time: 03/16/03 02:46  
Total Flow Volume (L): 384363  
Peak Flow (L/s): 116.37  
Obs. Fraction Runoff/Rain Volume: 0.072

### Sample Data

Start Date/Time: 03/15/03 16:00  
Stop Date/Time: 03/16/03 02:33  
Estimated Percent Capture: 95%  
Successful Aliquots: 20

Notes:

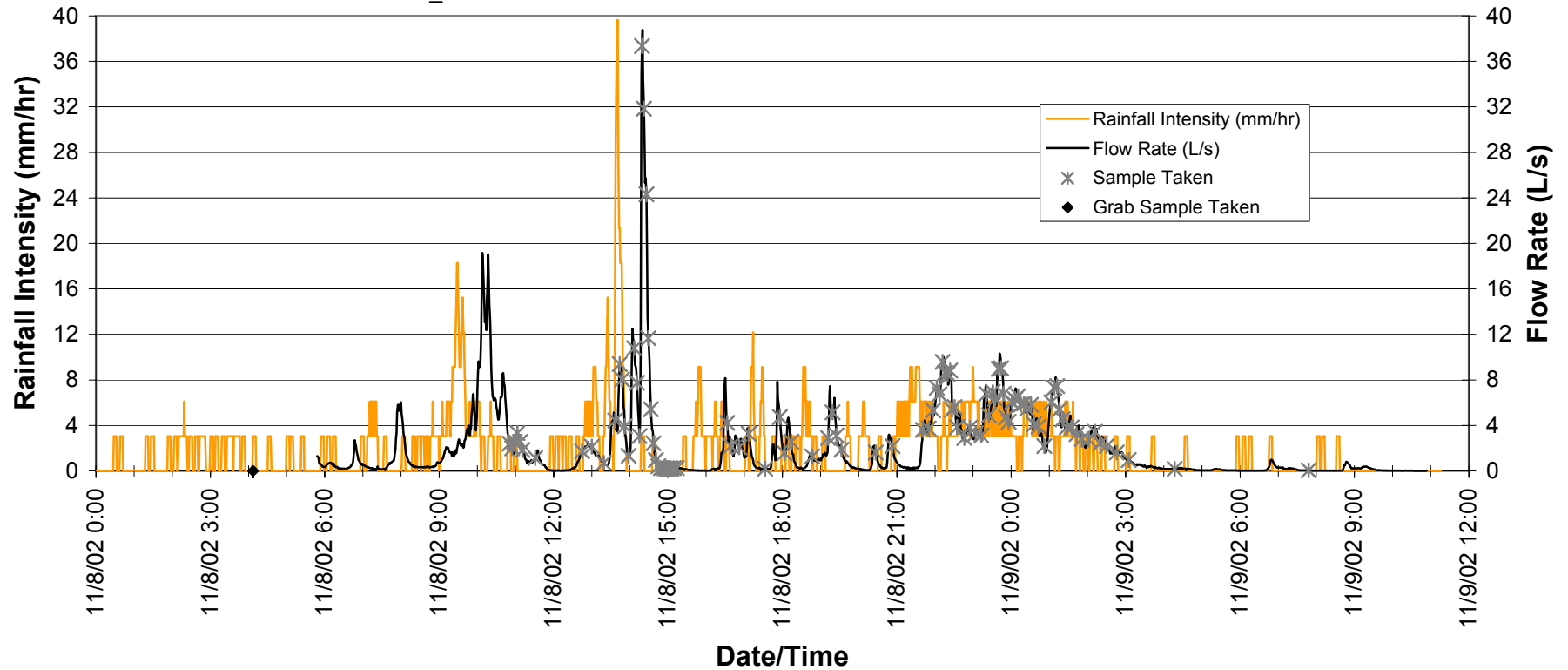
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## Event Summary

Site: 785L (12-220)

Catchment Area (ha): 0.89

Event: 11/08/2002 to 11/09/02\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 08:32  
 Event Rain (mm): 67.06  
 Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 11/08/02 05:48  
 Stop Date/Time: 11/09/02 10:54  
 Total Flow Volume (L): 217102  
 Peak Flow (L/s): 38.77  
 Obs. Fraction Runoff/Rain Volume: 0.364

### Sample Data

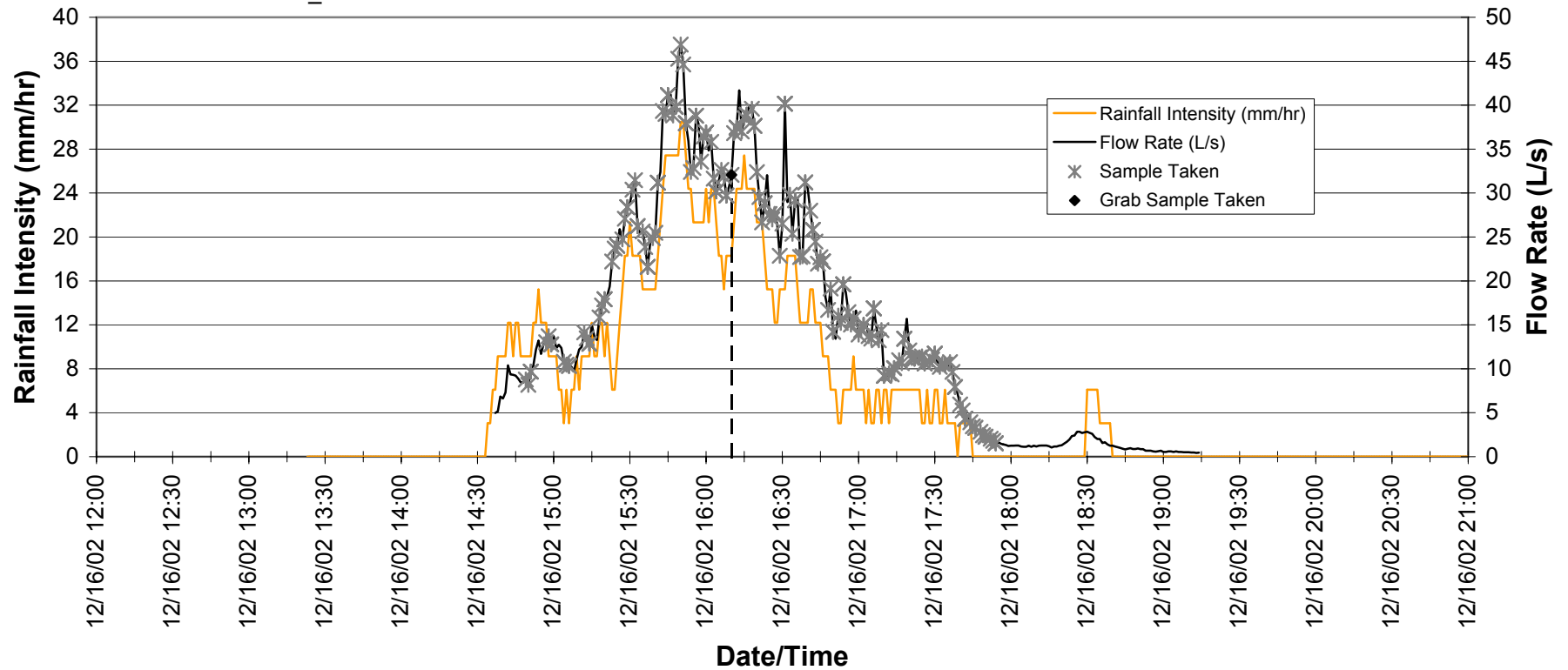
Start Date/Time: 11/08/02 05:48  
 Stop Date/Time: 11/09/02 07:49  
 Estimated Percent Capture: 78%  
 Successful Aliquots: 100

Notes: Flow meter was not totalizing flow at the beginning of the storm and sampler data was overwritten due to memory limitations. Sampler history identified 14 failures out of 23 samples collected during the overwritten time period.

## Event Summary

Site: 785L (12-220)  
Event: 12/16/2002\_2002-02

Catchment Area (ha): 0.89



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:35  
Event Rain (mm): 39.62  
Max Intensity (mm/hr): 30.48

### Runoff Data

Start Date/Time: 12/16/02 14:37  
Stop Date/Time: 12/16/02 19:14  
Total Flow Volume (L): 239518  
Peak Flow (L/s): 46.89  
Obs. Fraction Runoff/Rain Volume: 0.679

### Sample Data

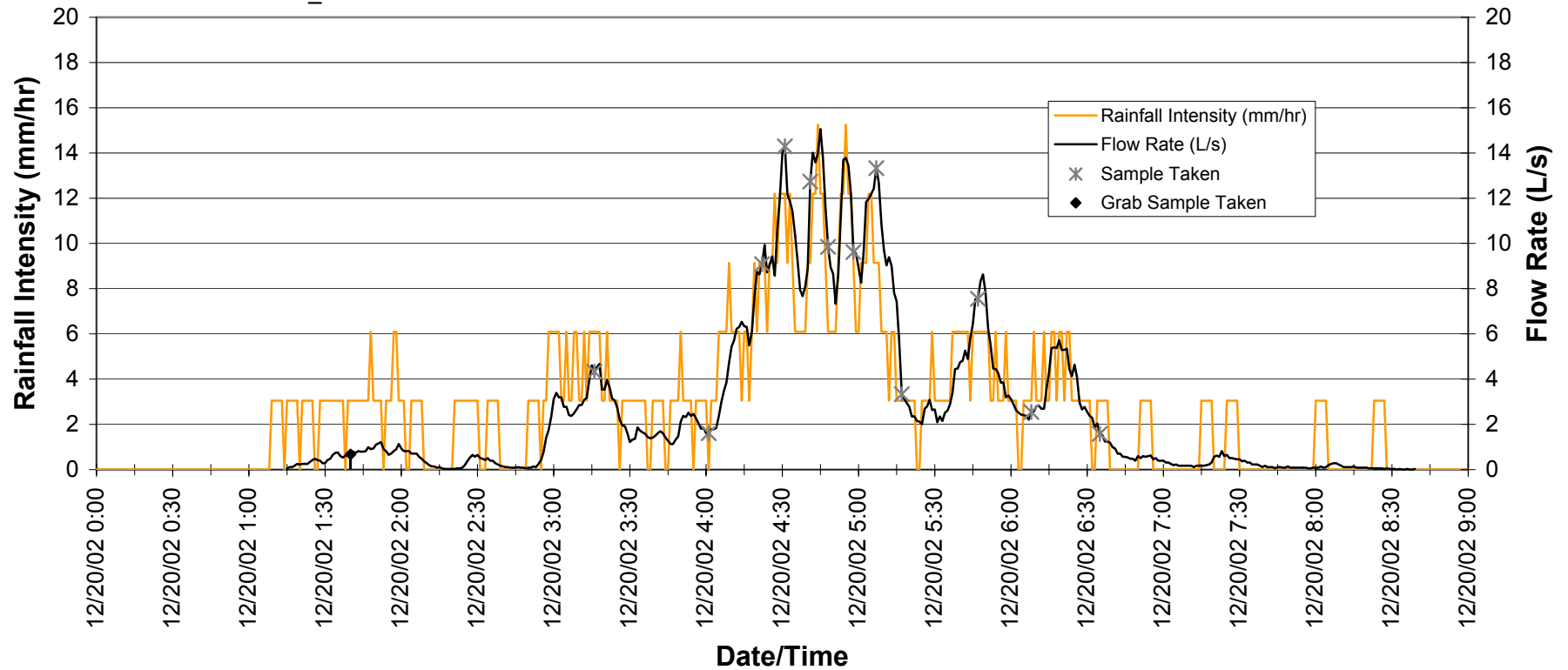
Start Date/Time: 12/16/02 14:37  
Stop Date/Time: 12/16/02 17:54  
Estimated Percent Capture: 98%  
Successful Aliquots: 176

Notes:

## Event Summary

Site: 785L (12-220)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 0.89



### Rain Data

Start Date/Time: 12/20/02 01:09  
Stop Date/Time: 12/20/02 08:23  
Event Rain (mm): 24.13  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 08:39  
Total Flow Volume (L): 73006  
Peak Flow (L/s): 15.06  
Obs. Fraction Runoff/Rain Volume: 0.340

### Sample Data

Start Date/Time: 12/20/02 01:15  
Stop Date/Time: 12/20/02 06:37  
Estimated Percent Capture: 97%  
Successful Aliquots: 12

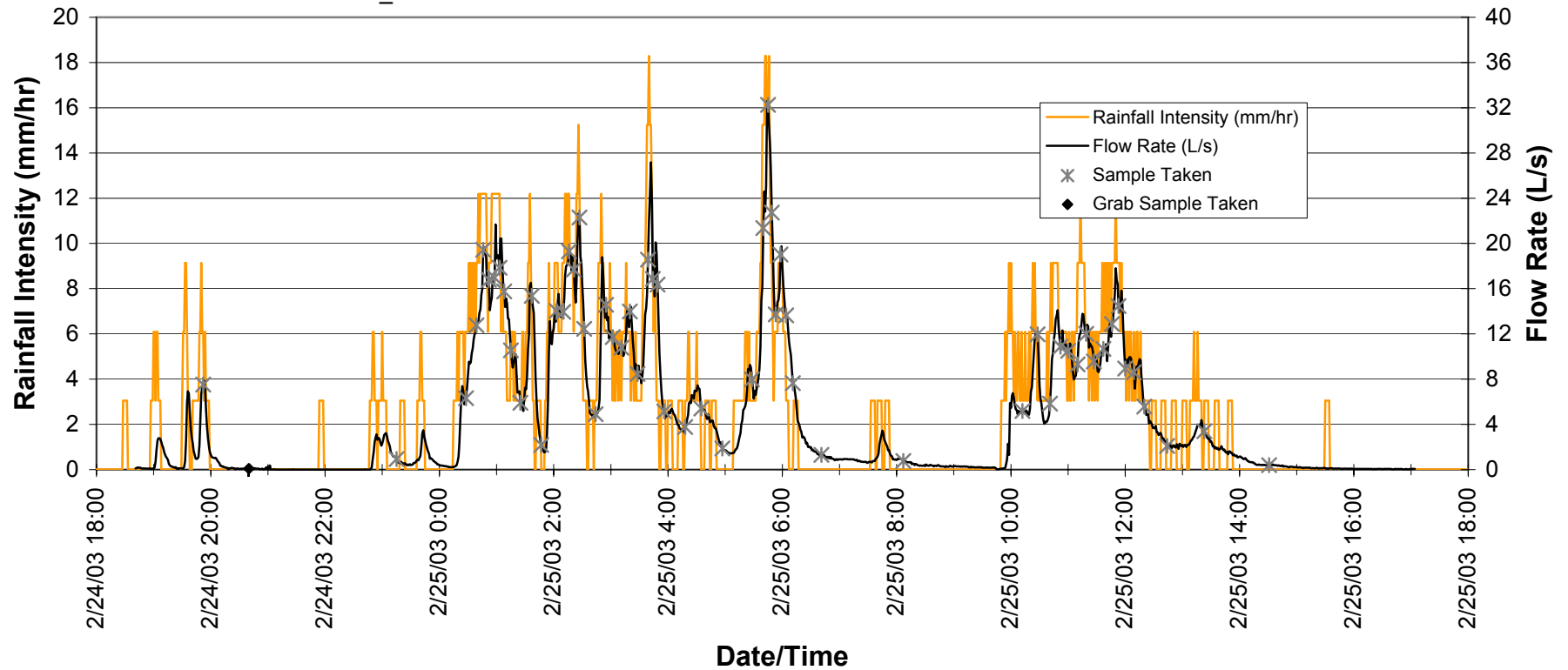
Notes:

## Event Summary

Site: 785L (12-220)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 0.89



### Rain Data

Start Date/Time: 02/24/03 18:28  
Stop Date/Time: 02/25/03 15:30  
Event Rain (mm): 56.90  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 02/24/03 18:41  
Stop Date/Time: 02/25/03 17:04  
Total Flow Volume (L): 348061  
Peak Flow (L/s): 32.57  
Obs. Fraction Runoff/Rain Volume: 0.687

### Sample Data

Start Date/Time: 02/24/03 18:41  
Stop Date/Time: 02/25/03 14:31  
Estimated Percent Capture: 100%  
Avg. Successful Aliquots/Bottle: 58  
Max. Successful Aliquots (Bottle#1): 59

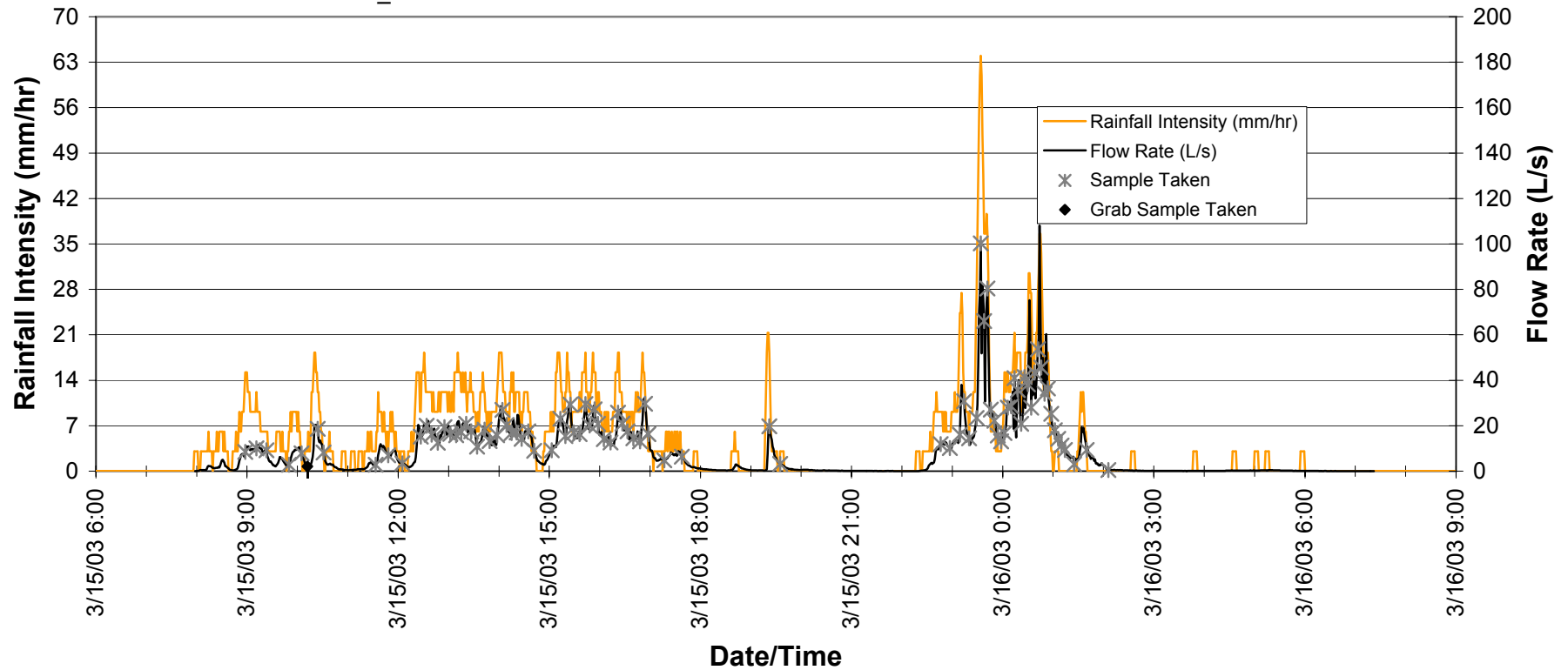
Notes:

## Event Summary

Site: 785L (12-220)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 0.89



### Rain Data

Start Date/Time: 03/15/03 07:57  
Stop Date/Time: 03/16/03 05:55  
Event Rain (mm): 119.63  
Max Intensity (mm/hr): 64.01

### Runoff Data

Start Date/Time: 03/15/03 07:58  
Stop Date/Time: 03/16/03 07:22  
Total Flow Volume (L): 677480  
Peak Flow (L/s): 108.11  
Obs. Fraction Runoff/Rain Volume: 0.636

### Sample Data

Start Date/Time: 03/15/03 07:58  
Stop Date/Time: 03/16/03 02:07  
Estimated Percent Capture: 100%  
Successful Aliquots: 89

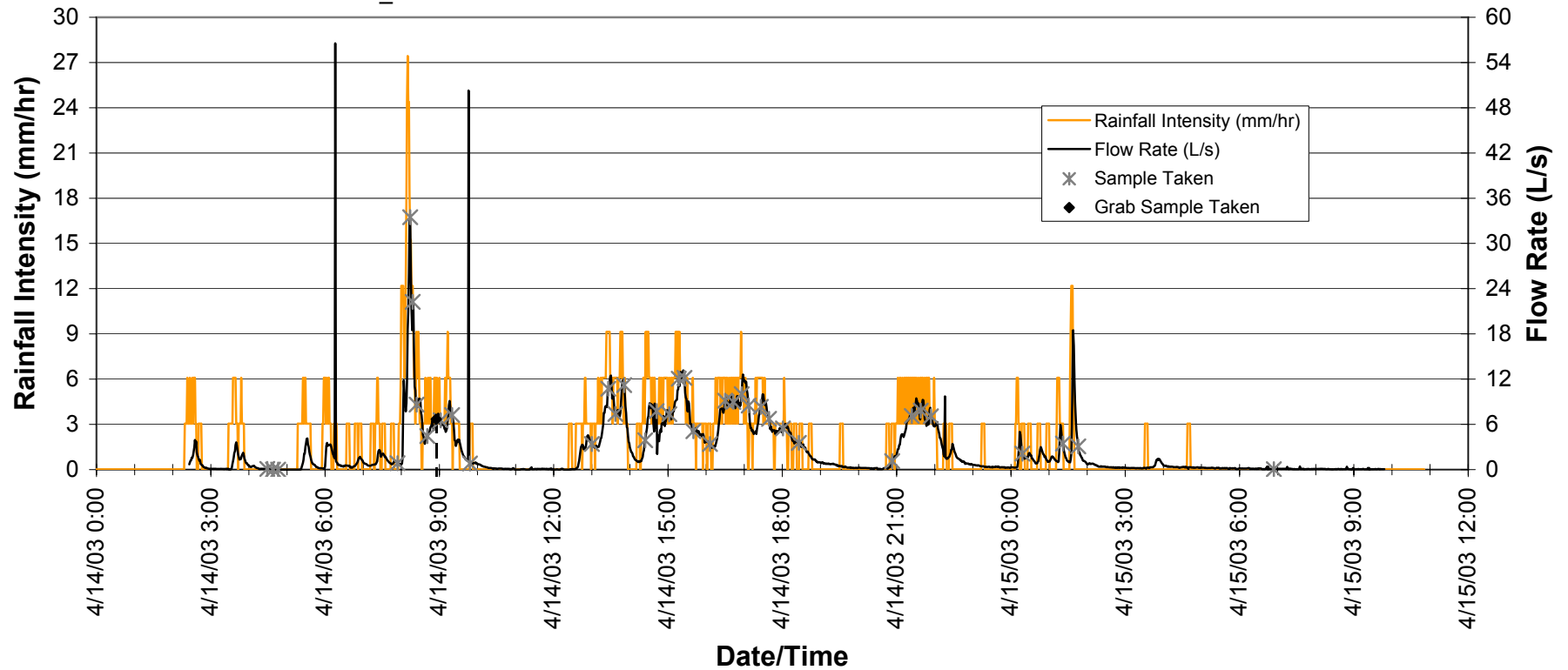
Notes:

## Event Summary

Site: 785L (12-220)

Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 0.89



### Rain Data

Start Date/Time: 04/14/03 02:19  
Stop Date/Time: 04/15/03 04:38  
Event Rain (mm): 52.58  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 04/14/03 02:26  
Stop Date/Time: 04/15/03 09:48  
Total Flow Volume (L): 267196  
Peak Flow (L/s): 56.54  
Obs. Fraction Runoff/Rain Volume: 0.571

### Sample Data

Start Date/Time: 04/14/03 02:26  
Stop Date/Time: 04/15/03 06:57  
Estimated Percent Capture: 100%  
Avg. Successful Aliquots/Bottle: 36  
Max. Successful Aliquots (Bottle#1): 38

Notes:

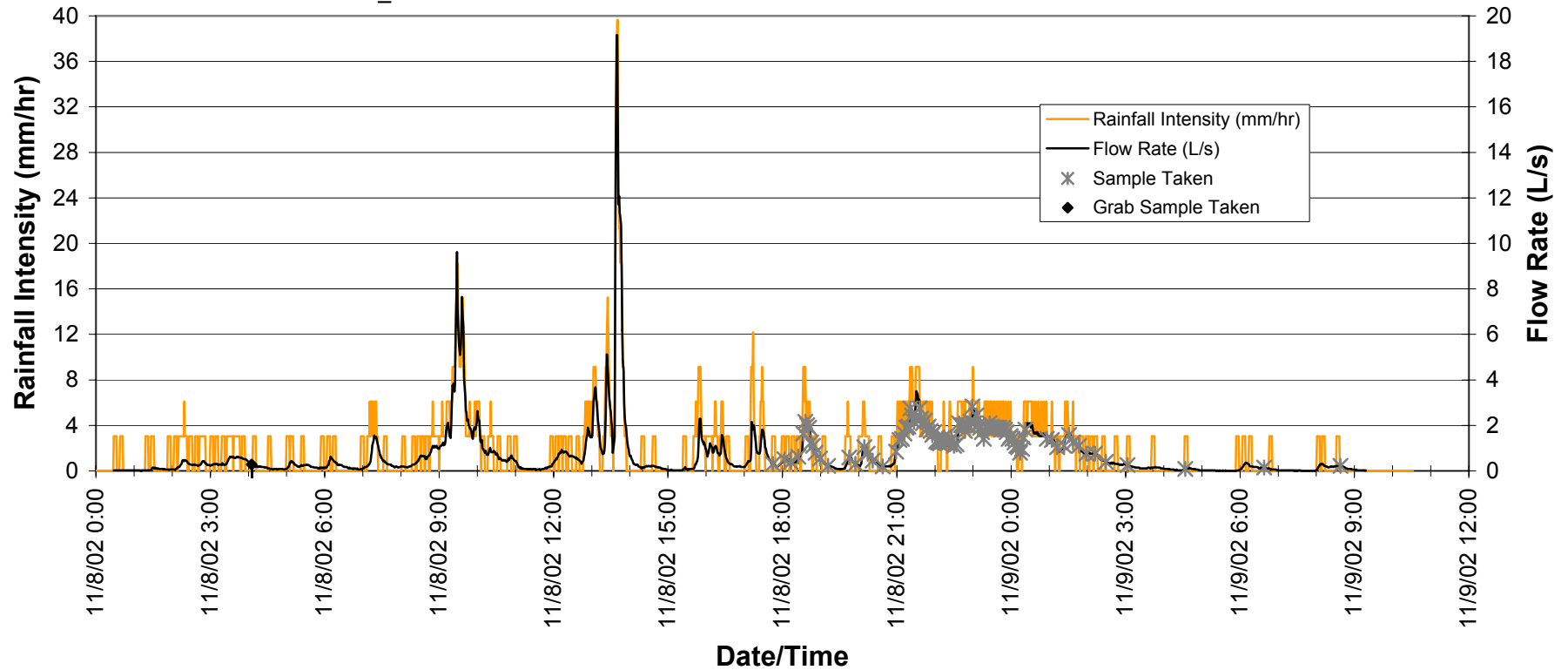
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## Event Summary

Site: 785L (12-221)

Catchment Area (ha): 0.15

Event: 11/8/02 to 11/9/02\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 08:32  
 Event Rain (mm): 67.06  
 Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 09:18  
 Total Flow Volume (L): 87021  
 Peak Flow (L/s): 19.16  
 Obs. Fraction Runoff/Rain Volume: 0.865

### Sample Data

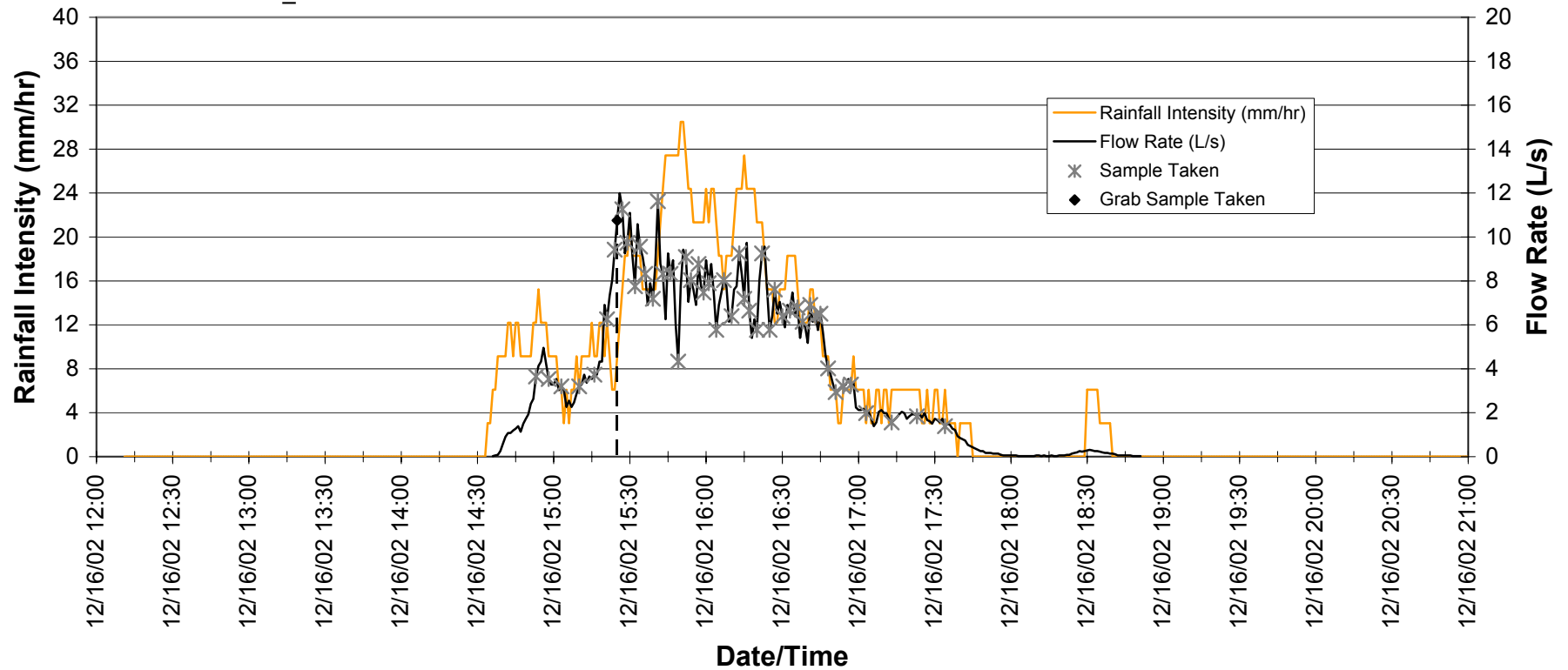
Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 08:39  
 Estimated Percent Capture: 98%  
 Avg. Successful Aliquots/Bottle: 96  
 Max. Successful Aliquots (Bottle#1): 97

Notes: Sampler data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is based on assumption that all samples were collected successfully. Sampler history identified 53 failures out of 139 samples collected during the overwritten time period.

## Event Summary

Site: 785L (12-221)  
Event: 12/16/02\_2002-02

Catchment Area (ha): 0.15



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:35  
Event Rain (mm): 39.62  
Max Intensity (mm/hr): 30.48

### Runoff Data

Start Date/Time: 12/16/02 14:36  
Stop Date/Time: 12/16/02 18:51  
Total Flow Volume (L): 54399  
Peak Flow (L/s): 12.00  
Obs. Fraction Runoff/Rain Volume: 0.915

### Sample Data

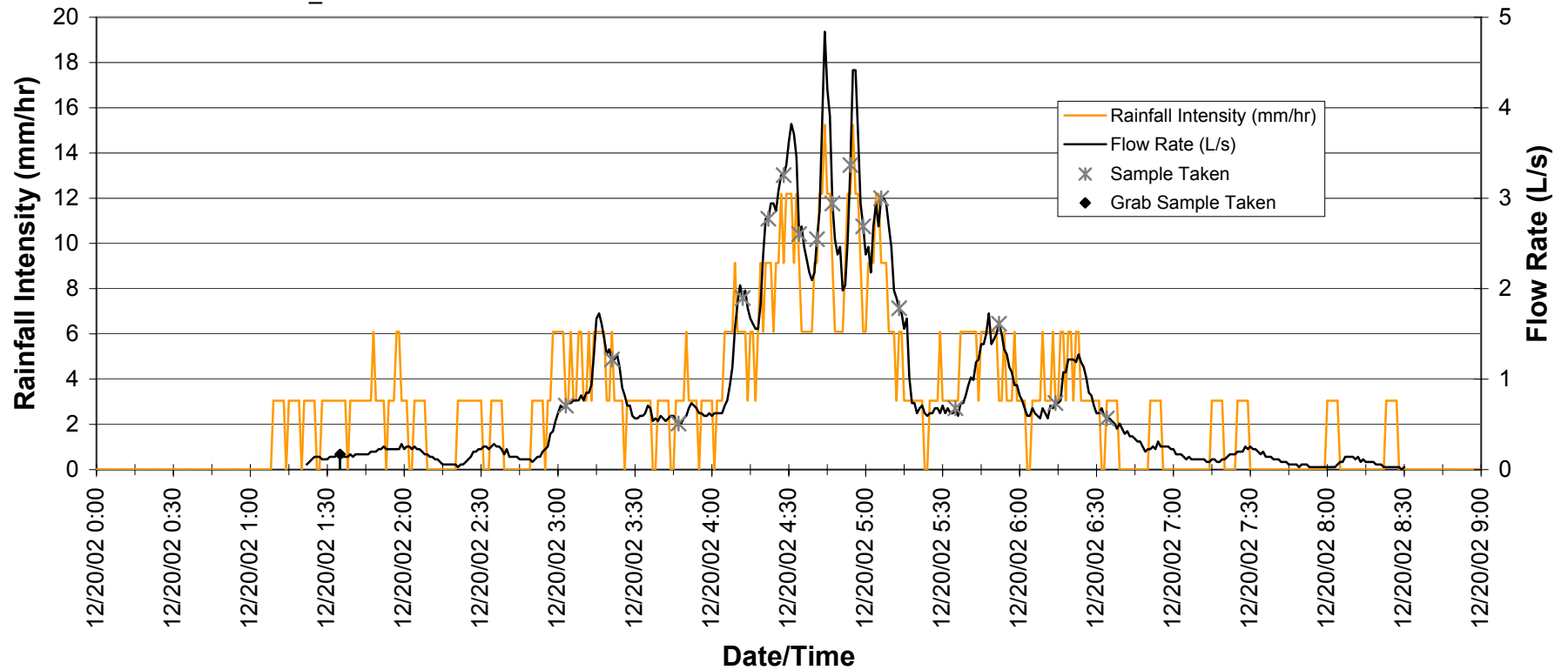
Start Date/Time: 12/16/02 14:36  
Stop Date/Time: 12/16/02 17:35  
Estimated Percent Capture: 96%  
Successful Aliquots: 47

Notes:

## Event Summary

Site: 785L (12-221)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 0.15



### Rain Data

Start Date/Time: 12/20/02 01:09  
Stop Date/Time: 12/20/02 08:23  
Event Rain (mm): 24.13  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:22  
Stop Date/Time: 12/20/02 08:30  
Total Flow Volume (L): 20368  
Peak Flow (L/s): 4.84  
Obs. Fraction Runoff/Rain Volume: 0.563

### Sample Data

Start Date/Time: 12/20/02 01:22  
Stop Date/Time: 12/20/02 06:36  
Estimated Percent Capture: 94%  
Successful Aliquots: 17

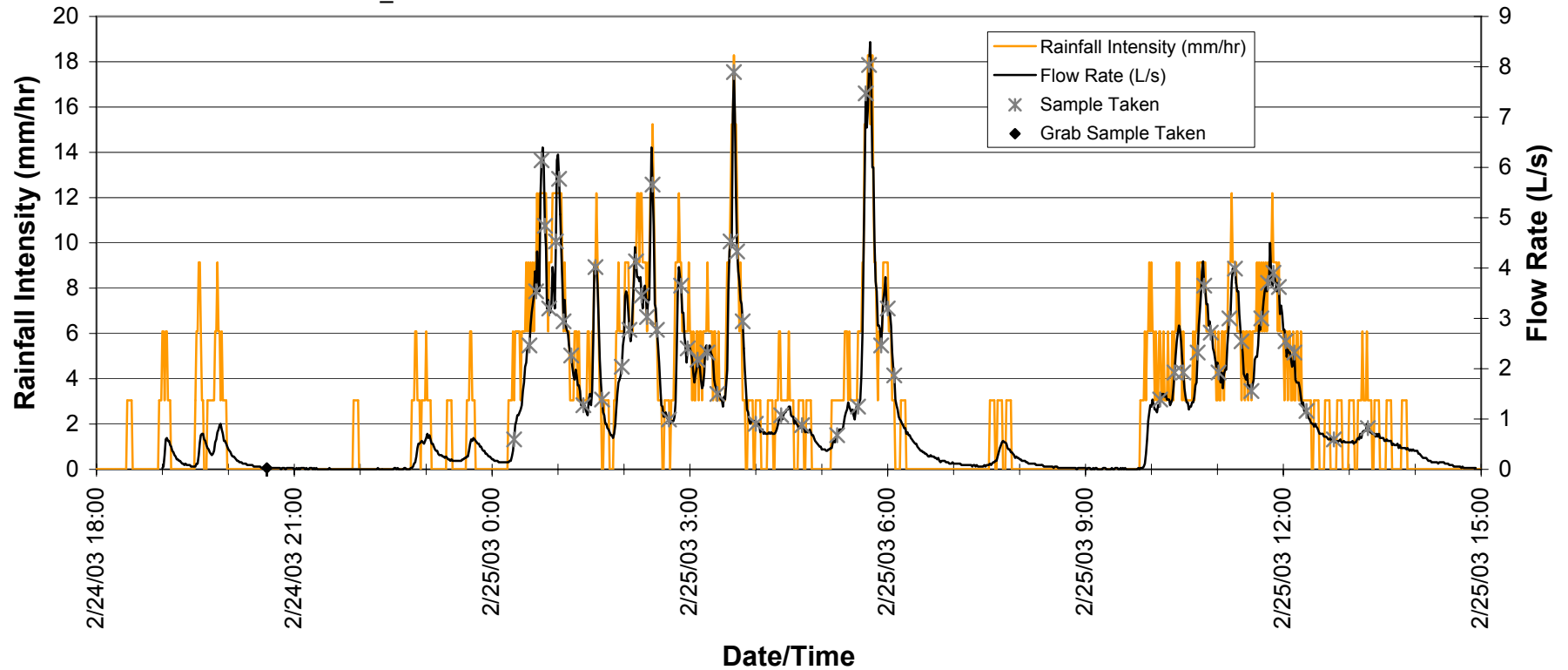
Notes:

## Event Summary

Site: 785L (12-221)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 0.15



### Rain Data

Start Date/Time: 02/24/03 18:28  
Stop Date/Time: 02/25/03 15:30  
Event Rain (mm): 56.90  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 02/24/03 19:00  
Stop Date/Time: 02/25/03 14:55  
Total Flow Volume (L): 76619  
Peak Flow (L/s): 8.49  
Obs. Fraction Runoff/Rain Volume: 0.898

### Sample Data

Start Date/Time: 02/24/03 19:00  
Stop Date/Time: 02/25/03 13:18  
Estimated Percent Capture: 88%  
Avg. Successful Aliquots/Bottle: 60  
Max. Successful Aliquots (Bottle#4): 61

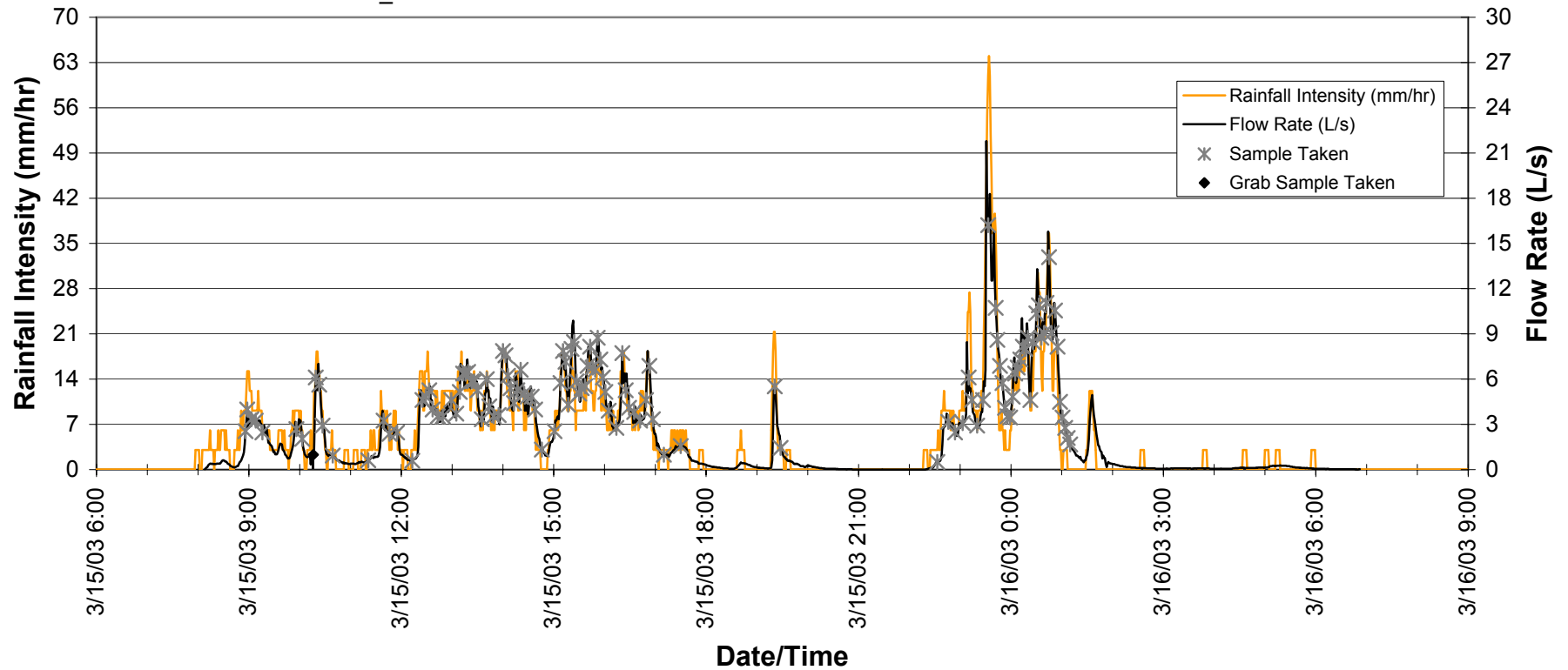
Notes:

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## Event Summary

Site: 785L (12-221)  
Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 0.15



### Rain Data

Start Date/Time: 03/15/03 07:57  
Stop Date/Time: 03/16/03 05:55  
Event Rain (mm): 119.63  
Max Intensity (mm/hr): 64.01

### Runoff Data

Start Date/Time: 03/15/03 08:08  
Stop Date/Time: 03/16/03 06:52  
Total Flow Volume (L): 175470  
Peak Flow (L/s): 21.79  
Obs. Fraction Runoff/Rain Volume: 0.978

### Sample Data

Start Date/Time: 03/15/03 08:08  
Stop Date/Time: 03/16/03 01:11  
Estimated Percent Capture: 89%  
Avg. Successful Aliquots/Bottle: 117  
Max. Successful Aliquots (Bottle#1): 120

Notes:

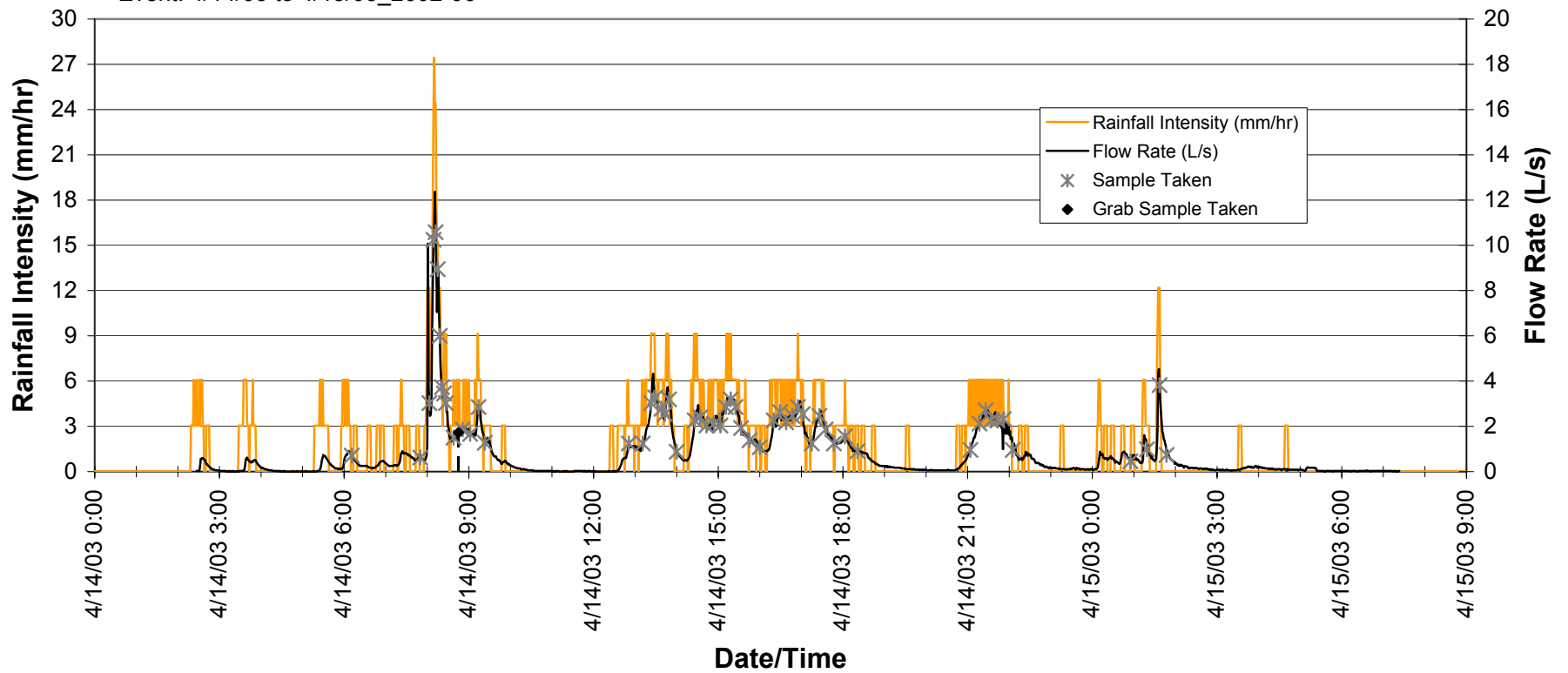
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## Event Summary

Site: 785L (12-221)

Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 0.15



### Rain Data

Start Date/Time:	04/14/03 02:19
Stop Date/Time:	04/15/03 04:38
Event Rain (mm):	52.58
Max Intensity (mm/hr):	27.43

### Runoff Data

Start Date/Time:	04/14/03 02:27
Stop Date/Time:	04/15/03 07:23
Total Flow Volume (L):	80631
Peak Flow (L/s):	12.37
Obs. Fraction Runoff/Rain Volume:	1.022

### Sample Data

Start Date/Time:	04/14/03 02:27
Stop Date/Time:	04/15/03 01:53
Estimated Percent Capture:	87%
Avg. Successful Aliquots/Bottle:	56
Max. Successful Aliquots (Bottle#1):	57

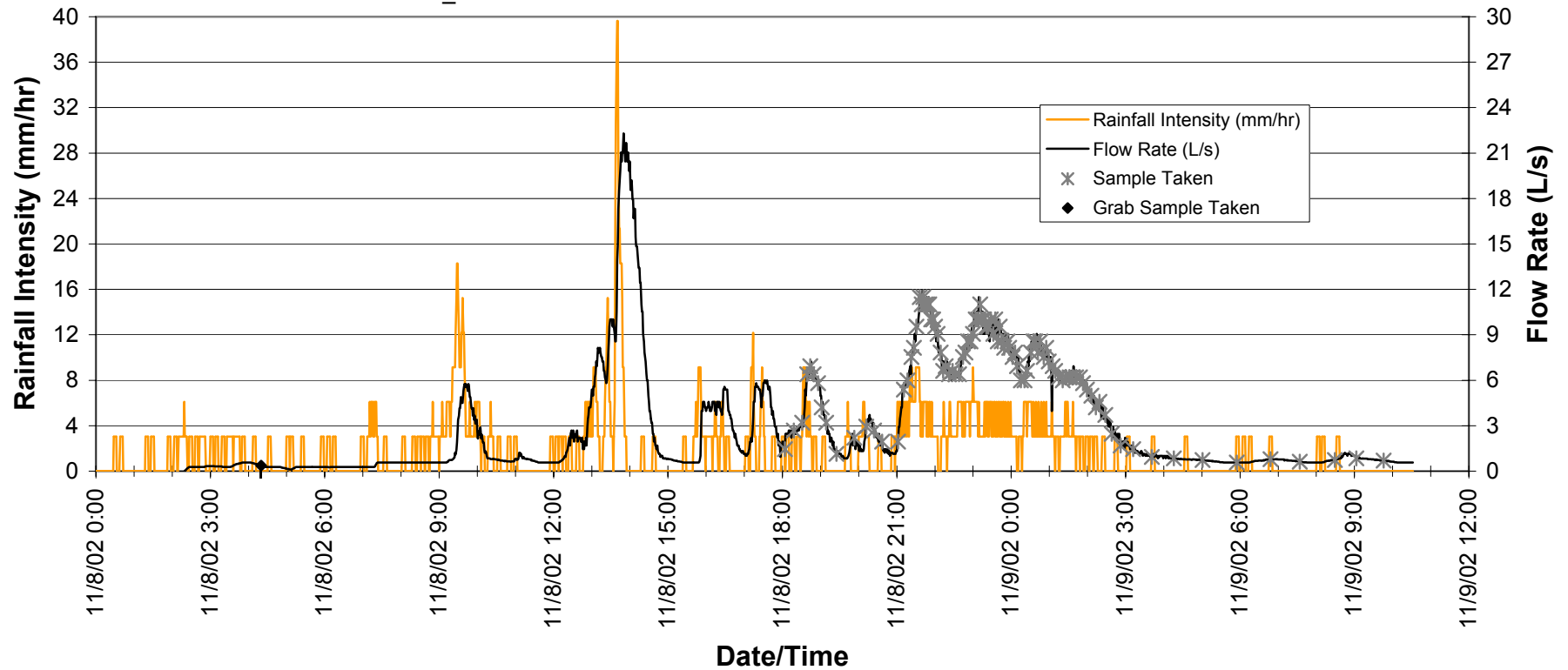
Notes:

## Event Summary

Site: 785L (12-222)

Catchment Area (ha): 1.17

Event: 11/8/2002 to 11/09/2002\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 08:32  
 Event Rain (mm): 67.06  
 Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 11/08/02 02:20  
 Stop Date/Time: 11/09/02 10:32  
 Total Flow Volume (L): 331768  
 Peak Flow (L/s): 22.30  
 Obs. Fraction Runoff/Rain Volume: 0.423

### Sample Data

Start Date/Time: 11/08/02 02:20  
 Stop Date/Time: 11/09/02 09:47  
 Estimated Percent Capture: 100%  
 Successful Aliquots: 100

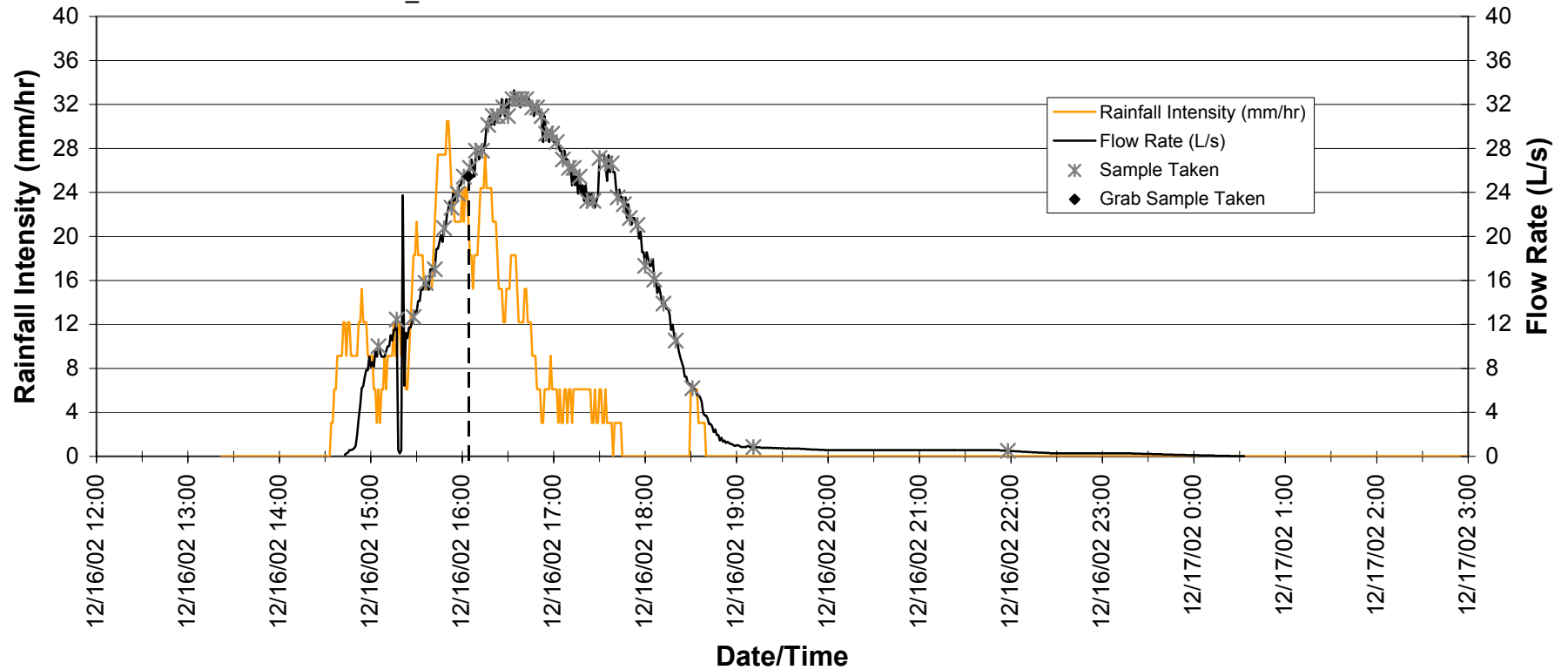
Notes: Sampler data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is based on assumption that all samples were collected successfully. Sampler history identified 0 failures during the entire storm event.

## Event Summary

Site: 785L (12-222)

Catchment Area (ha): 1.17

Event: 12/16/02 to 12/17/02\_2002-02



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:35  
Event Rain (mm): 39.62  
Max Intensity (mm/hr): 30.48

### Runoff Data

Start Date/Time: 12/16/02 14:43  
Stop Date/Time: 12/17/02 00:33  
Total Flow Volume (L): 289517  
Peak Flow (L/s): 33.28  
Obs. Fraction Runoff/Rain Volume: 0.624

### Sample Data

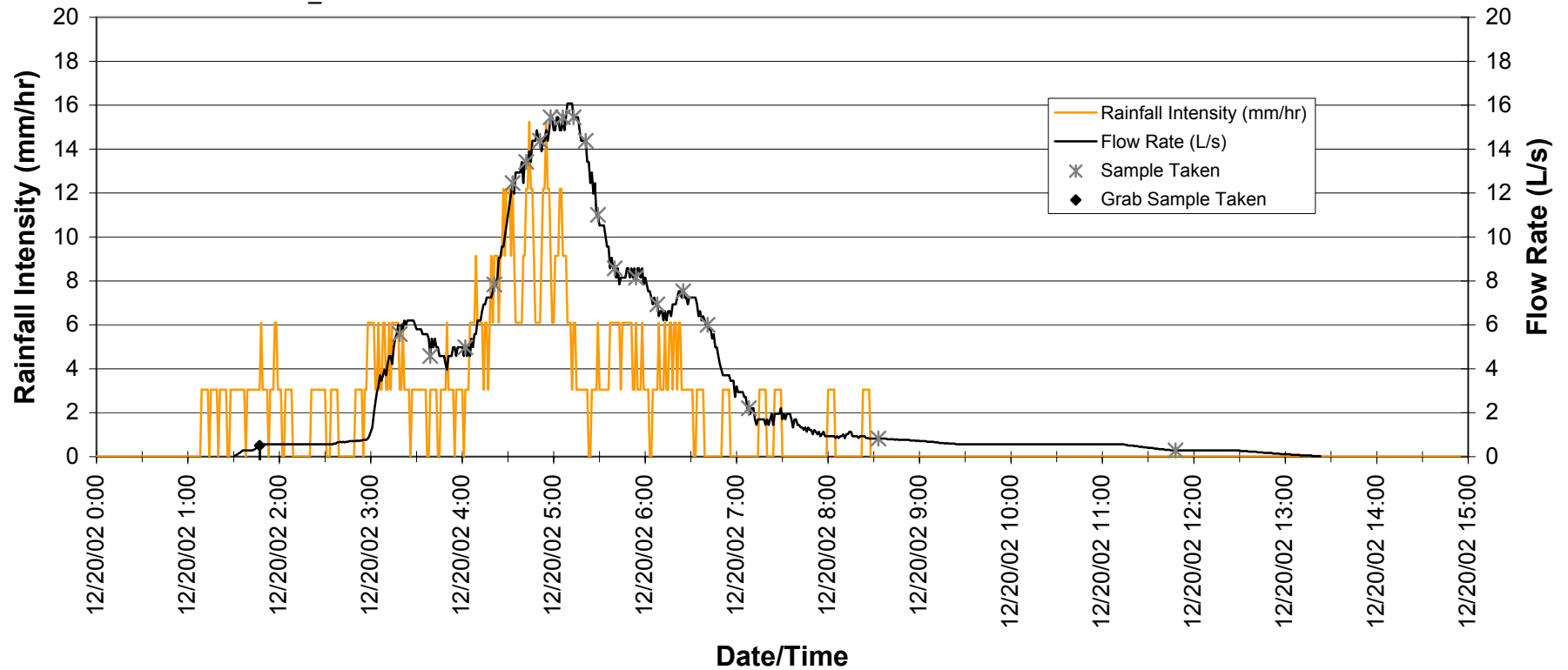
Start Date/Time: 12/16/02 14:43  
Stop Date/Time: 12/16/02 21:59  
Estimated Percent Capture: 99%  
Successful Aliquots: 47

Notes:

## Event Summary

Site: 785L (12-222)  
Event: 12/20/2002\_2002-03

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 12/20/02 01:09  
Stop Date/Time: 12/20/02 08:23  
Event Rain (mm): 24.13  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:31  
Stop Date/Time: 12/20/02 13:23  
Total Flow Volume (L): 137021  
Peak Flow (L/s): 16.07  
Obs. Fraction Runoff/Rain Volume: 0.485

### Sample Data

Start Date/Time: 12/20/02 01:31  
Stop Date/Time: 12/20/02 11:49  
Estimated Percent Capture: 99%  
Successful Aliquots: 20

Notes:

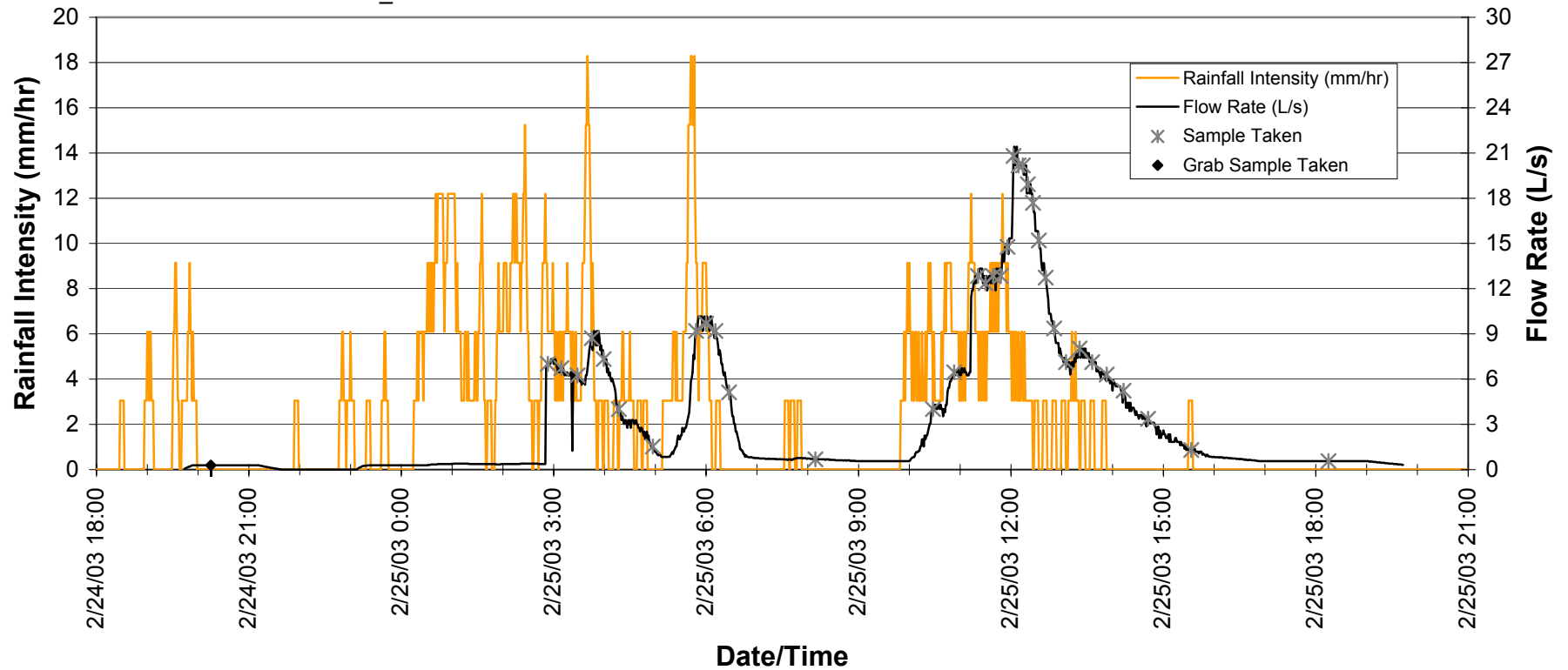
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## Event Summary

Site: 785L (12-222)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 02/24/03 18:28  
Stop Date/Time: 02/25/03 15:30  
Event Rain (mm): 56.90  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 02/24/03 19:44  
Stop Date/Time: 02/25/03 19:53  
Total Flow Volume (L): 247150  
Peak Flow (L/s): 21.42  
Obs. Fraction Runoff/Rain Volume: 0.371

### Sample Data

Start Date/Time: 02/24/03 19:44  
Stop Date/Time: 02/25/03 18:17  
Estimated Percent Capture: 98%  
Successful Aliquots: 36

Notes:

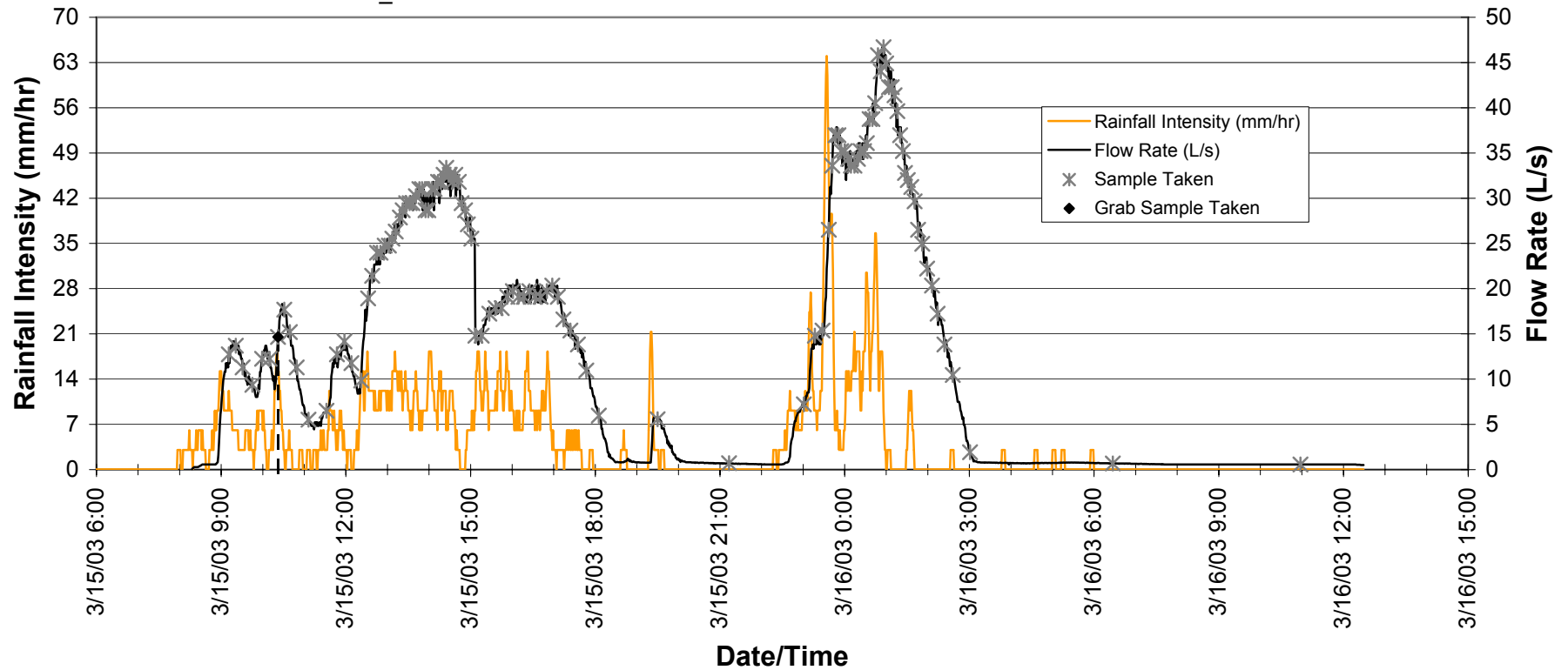
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## Event Summary

Site: 785L (12-222)

Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 03/15/03 07:57  
Stop Date/Time: 03/16/03 05:55  
Event Rain (mm): 119.63  
Max Intensity (mm/hr): 64.01

### Runoff Data

Start Date/Time: 03/15/03 08:18  
Stop Date/Time: 03/16/03 12:29  
Total Flow Volume (L): 1013799  
Peak Flow (L/s): 46.7  
Obs. Fraction Runoff/Rain Volume: 0.724

### Sample Data

Start Date/Time: 03/15/03 08:18  
Stop Date/Time: 03/16/03 11:00  
Estimated Percent Capture: 99%  
Successful Aliquots: 113

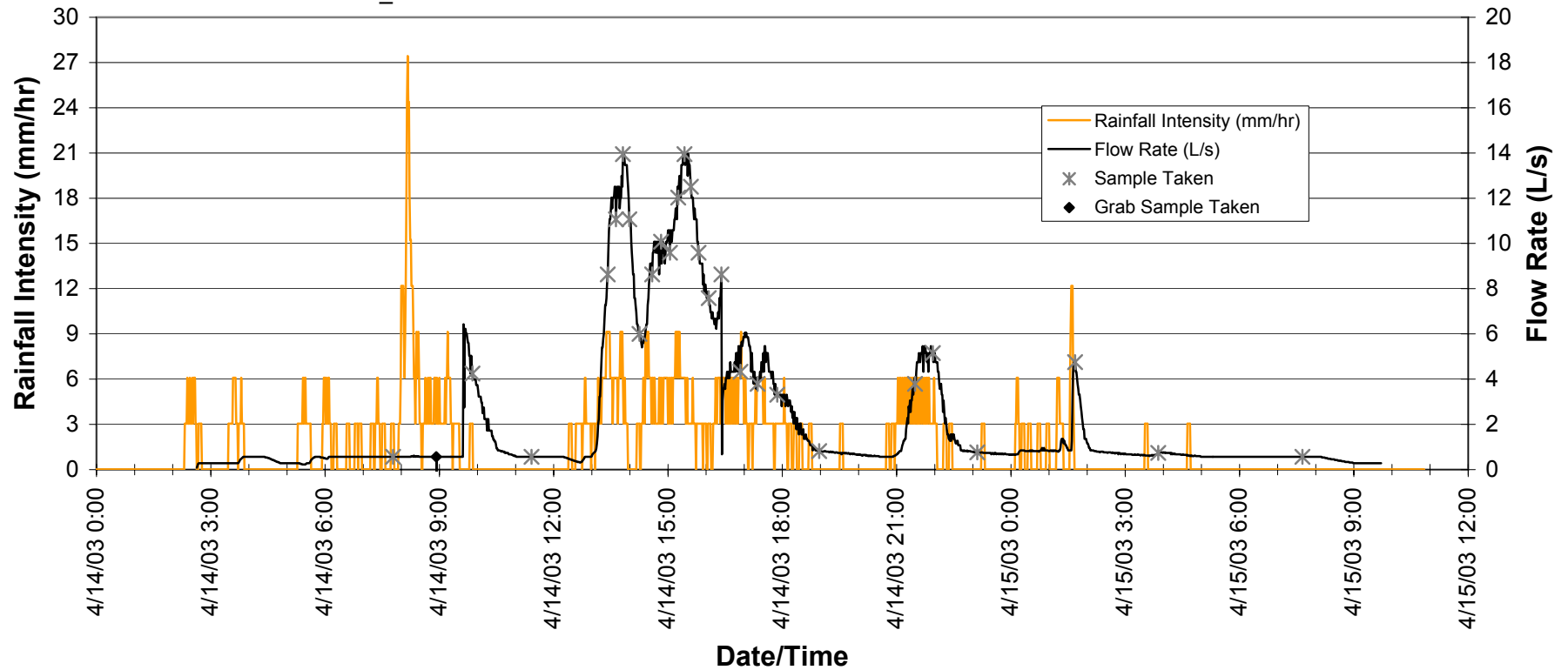
Notes:

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## Event Summary

Site: 785L (12-222)  
Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 04/14/03 02:19  
Stop Date/Time: 04/15/03 04:38  
Event Rain (mm): 52.58  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 04/14/03 02:38  
Stop Date/Time: 04/15/03 09:43  
Total Flow Volume (L): 223901  
Peak Flow (L/s): 13.95  
Obs. Fraction Runoff/Rain Volume: 0.364

### Sample Data

Start Date/Time: 04/14/03 02:38  
Stop Date/Time: 04/15/03 07:41  
Estimated Percent Capture: 99%  
Successful Aliquots: 27

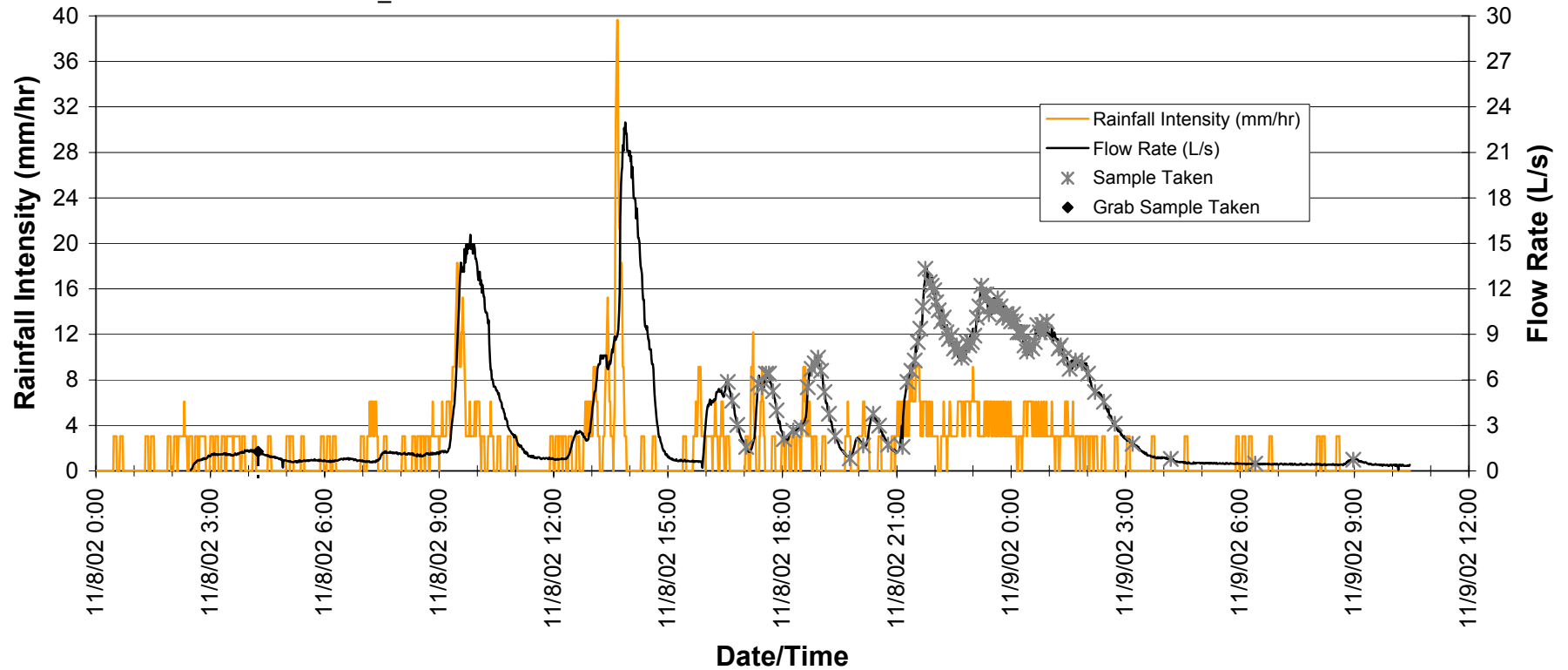
Notes:

## Event Summary

Site: 785L (12-223)

Catchment Area (ha): 1.17

Event: 11/8/02 to 11/9/02\_2002-01



### Rain Data (user-defined event)

Start Date/Time: 11/08/02 00:28  
 Stop Date/Time: 11/09/02 08:32  
 Event Rain (mm): 67.06  
 Max Intensity (mm/hr): 39.62

### Runoff Data

Start Date/Time: 11/08/02 02:29  
 Stop Date/Time: 11/09/02 10:27  
 Total Flow Volume (L): 411177  
 Peak Flow (L/s): 22.98  
 Obs. Fraction Runoff/Rain Volume: 0.524

### Sample Data

Start Date/Time: 11/08/02 02:29  
 Stop Date/Time: 11/09/02 09:00  
 Estimated Percent Capture: 98%  
 Successful Aliquots: 98

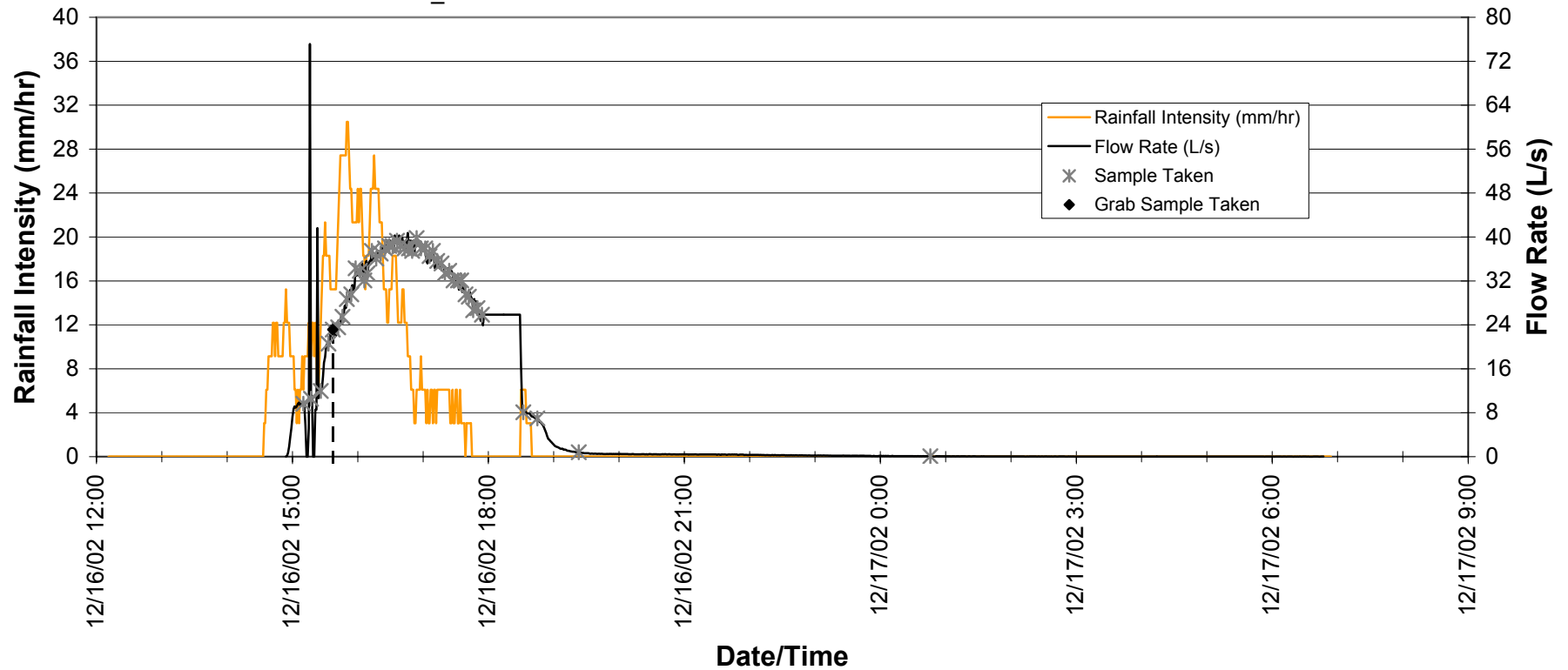
Notes: Sampler data was overwritten due to memory limitations. For percent capture, low end of range is based on data recorded, high end is based on assumption that all samples were collected successfully. Sampler history identified 4 failures out of 98 samples collected during the overwritten time period.

## Event Summary

Site: 785L (12-223)

Event: 12/16/2002 to 12/17/02\_2002-02

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 12/16/02 14:34  
Stop Date/Time: 12/16/02 18:35  
Event Rain (mm): 39.62  
Max Intensity (mm/hr): 30.48

### Runoff Data

Start Date/Time: 12/16/02 14:54  
Stop Date/Time: 12/17/02 06:47  
Total Flow Volume (L): 384118  
Peak Flow (L/s): 75.14  
Obs. Fraction Runoff/Rain Volume: 0.829

### Sample Data

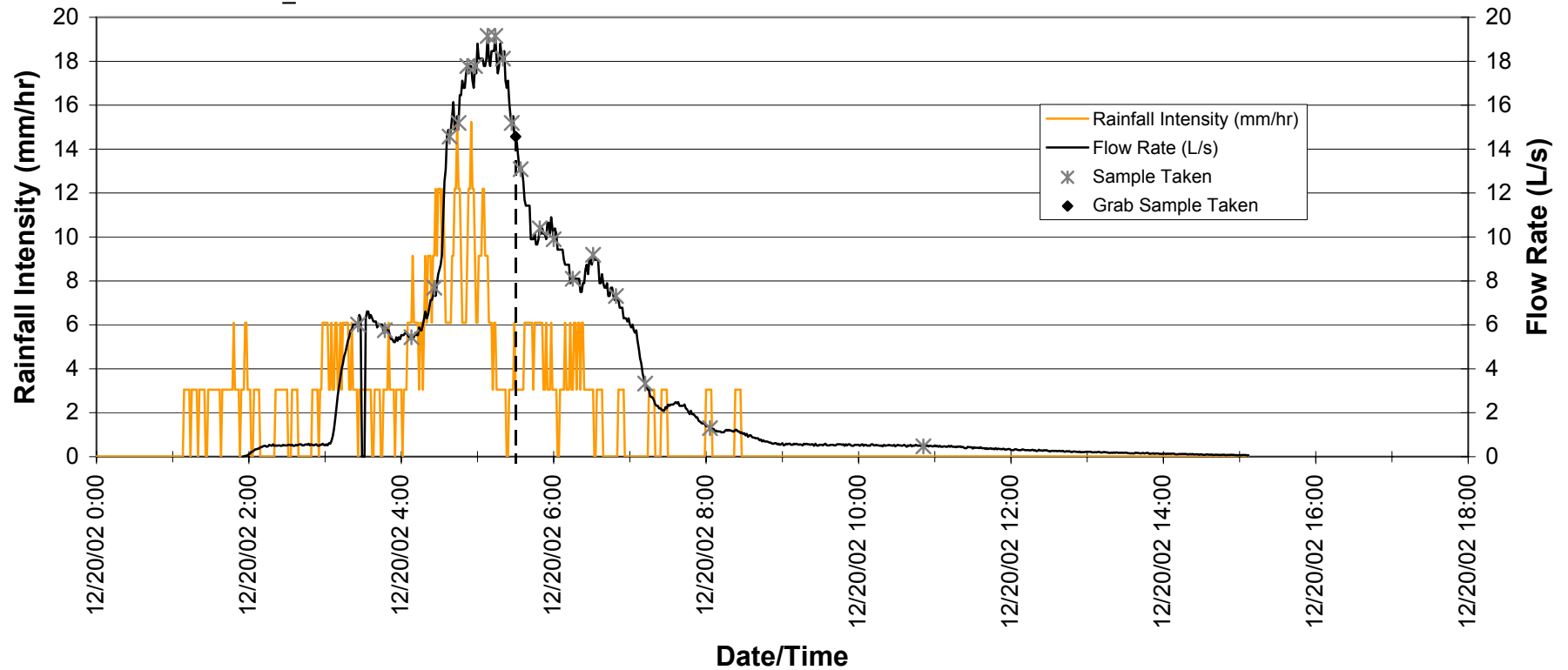
Start Date/Time: 12/16/02 14:54  
Stop Date/Time: 12/17/02 00:48  
Estimated Percent Capture: 95%  
Successful Aliquots: 45

Notes:

## Event Summary

Site: 785L (12-223)  
Event: 12/20/02\_2002-03

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 12/20/02 01:09  
Stop Date/Time: 12/20/02 08:23  
Event Rain (mm): 24.13  
Max Intensity (mm/hr): 15.24

### Runoff Data

Start Date/Time: 12/20/02 01:55  
Stop Date/Time: 12/20/02 15:07  
Total Flow Volume (L): 158446  
Peak Flow (L/s): 19.15  
Obs. Fraction Runoff/Rain Volume: 0.561

### Sample Data

Start Date/Time: 12/20/02 01:55  
Stop Date/Time: 12/20/02 10:53  
Estimated Percent Capture: 98%  
Successful Aliquots: 21

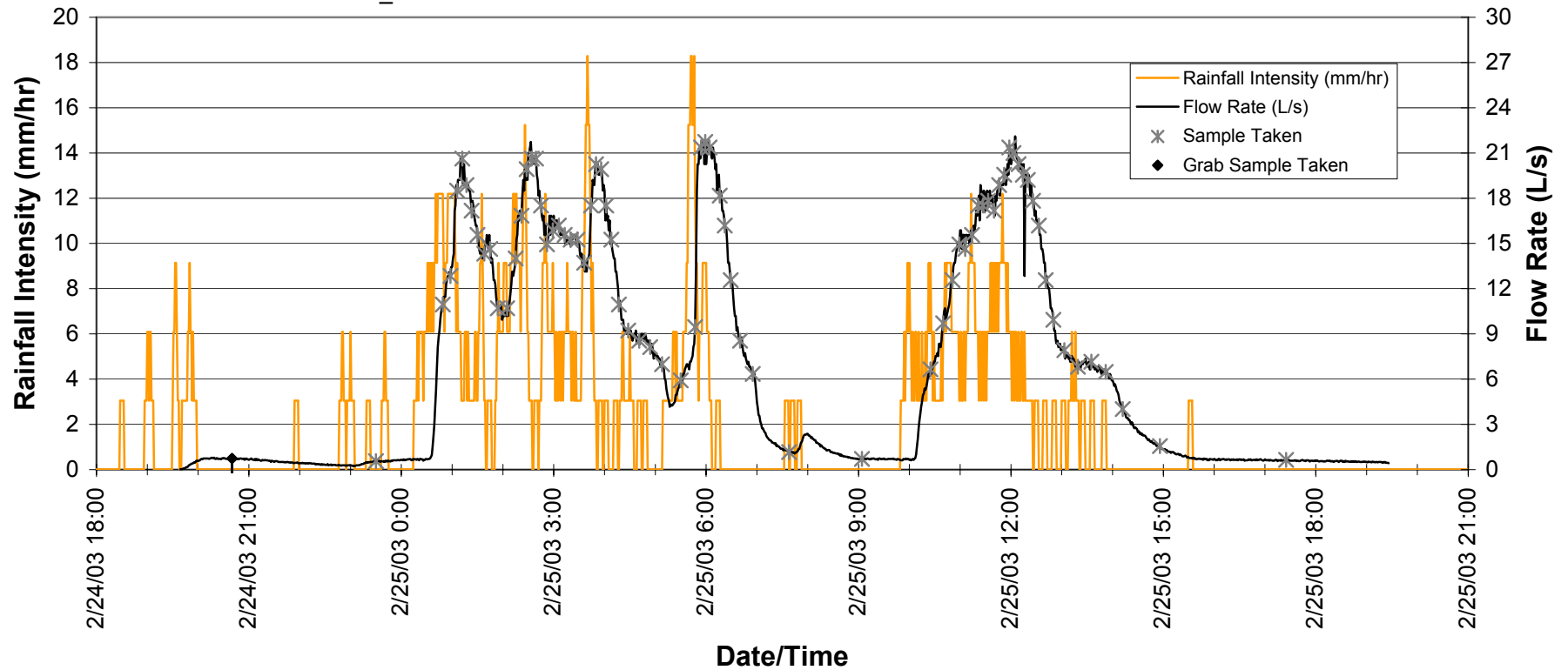
Notes:

## Event Summary

Site: 785L (12-223)

Event: 2/24/03 to 2/25/03\_2002-04

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 02/24/03 18:28  
Stop Date/Time: 02/25/03 15:30  
Event Rain (mm): 56.90  
Max Intensity (mm/hr): 18.29

### Runoff Data

Start Date/Time: 02/24/03 19:39  
Stop Date/Time: 02/25/03 19:26  
Total Flow Volume (L): 520488  
Peak Flow (L/s): 22.10  
Obs. Fraction Runoff/Rain Volume: 0.782

### Sample Data

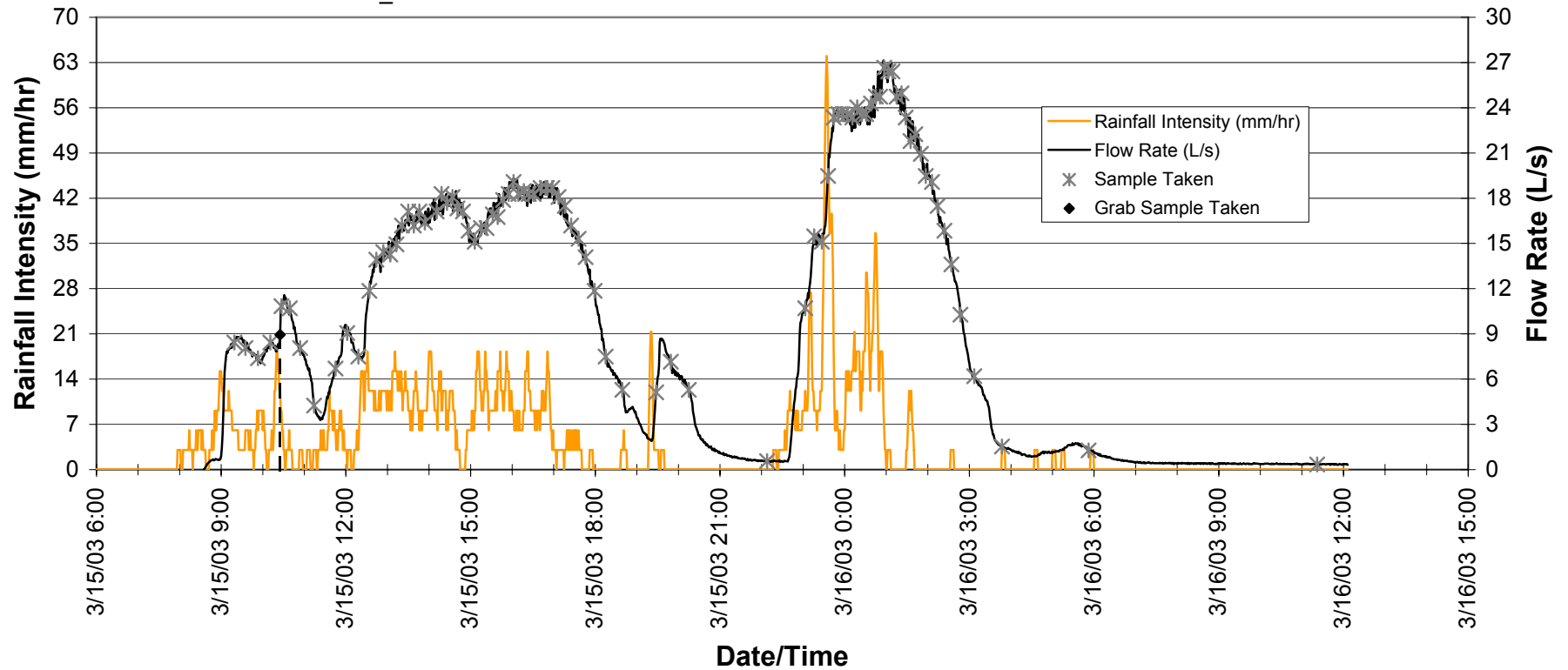
Start Date/Time: 02/24/03 19:39  
Stop Date/Time: 02/25/03 17:27  
Estimated Percent Capture: 99%  
Successful Aliquots: 75

Notes:

## Event Summary

Site: 785L (12-223)  
Event: 3/15/03 to 3/16/03\_2002-05

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 03/15/03 07:57  
Stop Date/Time: 03/16/03 05:55  
Event Rain (mm): 119.63  
Max Intensity (mm/hr): 64.01

### Runoff Data

Start Date/Time: 03/15/03 08:35  
Stop Date/Time: 03/16/03 12:06  
Total Flow Volume (L): 804750  
Peak Flow (L/s): 27.14  
Obs. Fraction Runoff/Rain Volume: 0.575

### Sample Data

Start Date/Time: 03/15/03 08:35  
Stop Date/Time: 03/16/03 11:24  
Estimated Percent Capture: 100%  
Successful Aliquots: 90

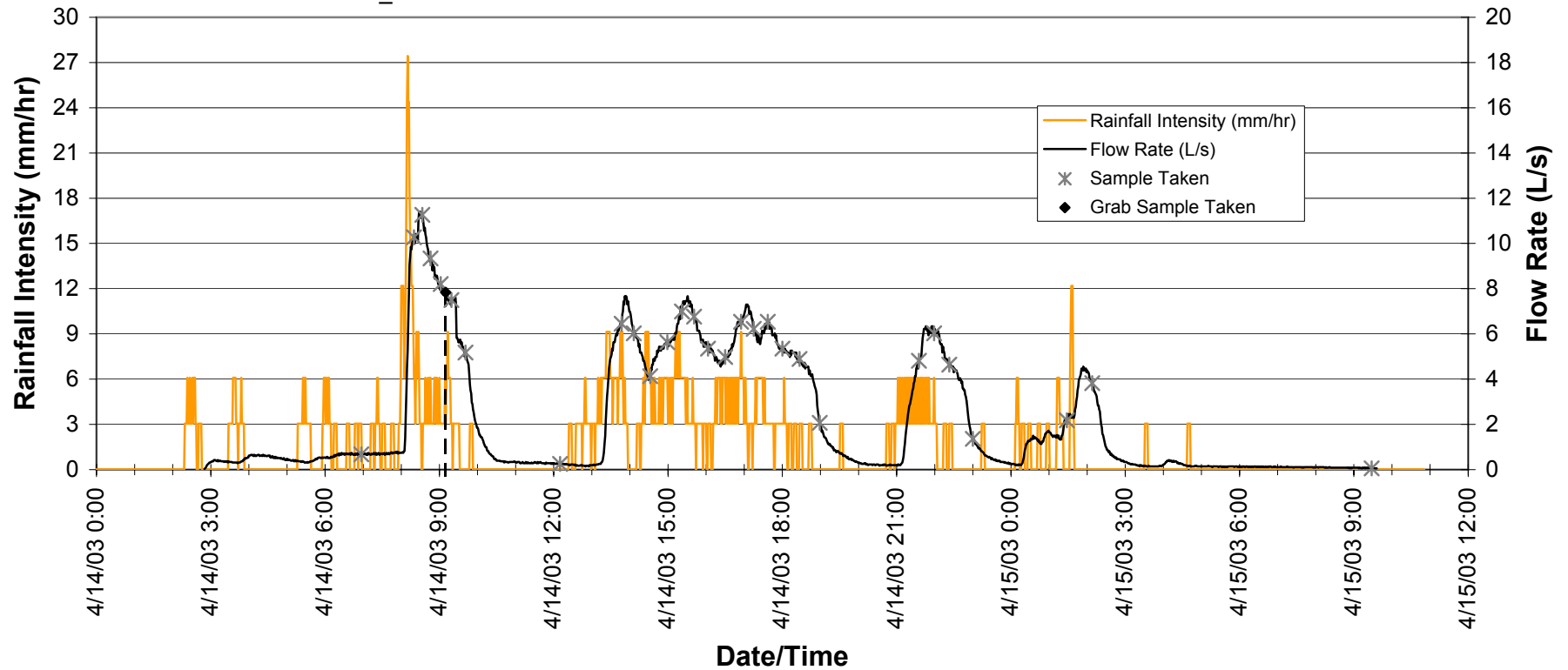
Notes:

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## Event Summary

Site: 785L (12-223)  
Event: 4/14/03 to 4/15/03\_2002-06

Catchment Area (ha): 1.17



### Rain Data

Start Date/Time: 04/14/03 02:19  
Stop Date/Time: 04/15/03 04:38  
Event Rain (mm): 52.58  
Max Intensity (mm/hr): 27.43

### Runoff Data

Start Date/Time: 04/14/03 02:50  
Stop Date/Time: 04/15/03 09:36  
Total Flow Volume (L): 236271  
Peak Flow (L/s): 11.40  
Obs. Fraction Runoff/Rain Volume: 0.384

### Sample Data

Start Date/Time: 04/14/03 02:50  
Stop Date/Time: 04/15/03 09:29  
Estimated Percent Capture: 100%  
Successful Aliquots: 29

Notes: